**State of New Hampshire**
**Bureau of Purchase and Property**
**25 Capitol Street, State House Annex**
**Concord, New Hampshire 03301-6398**

**Date:** **7/23/2004**

**Bid No.:** **51**

**Date of Bid Opening:** **8/6/2004**

**Time of Bid Opening:** **1:30**

**PLEASE DIRECT ANY QUESTIONS REGARDING THIS BID TO: ALAN HOFMANN, PURCHASING AGENT/kc**
**TEL. NO: (603) 271-2550 - FAX No. (603) 271-2700**

# BID INVITATION FOR: ACCESSIBLE SMALL BODY ON CHASSIS VEHICLES

Unless specifically amended or deleted by the Division of Plant and Property Management, the following General Terms and Conditions apply to this Bid and any resulting Purchase Order or Contract.

## GENERAL CONDITIONS AND INSTRUCTIONS:

**NATURE OF, AND ELIGIBILITY TO RESPOND.** This bid invitation is submitted in accordance with Chapter 21-1, and rules promulgated thereunder, and constitutes a firm and binding offer. A bid may not be withdrawn unless permission is obtained from the Bureau of Purchase and Property.

Bids may be issued only by the Bureau of Purchase and Property and are not transferable.

**SAMPLES AND DEMONSTRATIONS.** When samples are required they must be submitted free of costs and will not be returned.

Items left for demonstration or evaluation purposes shall be delivered and installed free of charge and shall be removed at no cost to the State. Demonstration units shall not be offered to the State as new equipment.

**Bids.** Bids must be received at the Bureau of Purchase and Property before the date and time specified for the opening. Bids must be submitted on this bid form or exact copies and must be typed or clearly printed in ink. Corrections must be initialed. Bids are to be made less Federal Excise Tax and no charge for handling unless required by law.

Bids will be made available to the public after the time of award. Bid results will be given by mail only if requested in writing and accompanied by a self-addressed, stamped business size envelope.

**SPECIFICATIONS.** Vendors must submit on items as specified. Proposed changes must be submitted in writing and received at the Bureau of Purchase and Property at least five (5) working days prior to the bid opening. Vendors shall be notified in writing if any changes to the specifications are made.

**AWARD.** The award will be made to the responsible Vendor submitting a conforming RFB meeting specifications at the lowest cost unless other criteria are noted in the RFB. Unless otherwise noted, the award may be made by individual items.

If there is a discrepancy between the unit price and the extension, the unit price will prevail.

When identical low bids are received the award will be made in accordance with the Administrative Rules.

Discounts will not be considered in making award but may be offered on the Invoice for earlier payment and will be applicable on the date of completion of delivery or receipt of Invoice, whichever is later. On orders specifying split deliveries, discounts will apply on the basis of each delivery or receipt of Invoice, whichever is later.

**PATENT INFRINGEMENT.** Any responding vendor who has reason to believe that any other responding vendor will violate a patent should such responding vendor be awarded the contract shall set forth in writing, prior to the date and time of opening, the grounds for his belief and a detailed description of the patent.

**ASSIGNMENT PROVISION.** The responding vendor hereby agrees to assign all causes of action that it may acquire under the antitrust laws of New Hampshire and the United States as the result of conspiracies, combinations, or contracts in restraint of trade which materially affect the price of goods or services obtained by the state under this contract if so requested by the State of New Hampshire.

**FEDERAL FUNDS.** This Division of Plant and Property Management, under RSA 21-1:14, VIII shall assure the continuation or granting of federal funds or other assistance not otherwise provided for by law by following the Federal Procurement Standards.

**STATE'S OPTIONS:** The Bureau of Purchase and Property reserves the right to reject or accept all or any part of any bid, to determine what constitutes a conforming bid, to award the bid solely as it deems to be in the best interest of the State, and to waive irregularities that it considers not material to the bid.

**PUBLIC INFORMATION:** The responding vendor hereby acknowledges that all information relating to this bid and any resulting order (Including but not limited to fees, contracts, agreements and prices) are subject to these laws of the State of New Hampshire regarding public information.

**PERSONAL LIABILITY:** The responding vendor agrees that in the preparation of this bid or the execution of any resulting contract or order, representatives of the State of New Hampshire shall incur no liability of any kind.

**PROOF OF COMPLIANCE.** The responding vendor may be required to supply proof of compliance with proposal specifications. When requested, the responding vendor must immediately supply the Bureau of Purchase and Property with certified test results or certificates of compliance. Where none are available, the State may require independent laboratory testing. All costs for such testing, certified test results or certificate of compliance shall be the responsibility of the responding vendor.

**FORM OF CONTRACT.** The terms and conditions set forth in any additional Terms and Conditions by the Bureau of Purchase and Property are part of the bid and will apply to any contract awarded the responding vendor unless specific exceptions are taken and accepted and will prevail over any contrary provisions in Terms and Conditions submitted by the responding vendor.

**OFFER.** The undersigned hereby offers to sell to the State of New Hampshire the commodities or services indicated in the following page(s) of this Bid at the price(s) quoted in complete accordance with all conditions of this Bid.

**Company Name:**_____

**Address:** _____

_____

**Tel.#:(local)**_____ **(Toll free)**_____

**Fax#:**_____ **(EMAIL)** _____

**Authorized Signature:**_____

_____
**(TYPE OR PRINT NAME)**

This document must be signed by a person who is authorized to legally obligate the responding vendor. A signature on this document indicates that all State of New Hampshire terms and conditions are accepted by the responding vendor and that any and all other terms and conditions submitted by the responding vendor are null and void, even if such terms and conditions have terminology to the contrary. The responding vendor shall also be subject to State of New Hampshire terms and conditions as stated on the reverse of the purchase order.

# CONTRACT TERMS AND CONDITIONS

1. The State of New Hampshire, acting through the Division of Plant and Property Management, engages the firm or individual ("the Vendor") to perform the services and/or sale of goods, described in the attached State documents, if any, and the Vendor's bid or quotation, both of which are incorporated herein by reference.

**2. COMPLIANCE BY VENDOR WITH LAWS AND REGULATIONS.** In connection with the performance of this agreement, the Vendor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Vendor, including, but not limited to civil rights and equal opportunity laws.

**3. TERM.** The contract, and all obligations of the parties thereunder, shall become effective on a specified date and shall be completed in their entirety prior to a specified date. Any work undertaken by the Vendor prior to the effective date shall be at his sole risk and, in the event that the contract shall not become effective, the State shall be under no obligation to reimburse the Vendor for any such work.

**4. CONTRACT PRICE.** The contract price, a payment schedule and a maximum limitation of price shall be as specified by the bid invitation and the Vendor's bid. All payments shall be conditioned upon receipt, and approval by the State, of appropriate vouchers and upon satisfactory performance by the Vendor, as determined by the State. The payment by the State of the Contract Price shall constitute complete reimbursement to the Vendor for all expenses of any nature incurred by the Vendor in the performance by the Vendor and complete payment for the Services. The State shall have no other liability to the Vendor.

**5. DELIVERY.** If the vendor fails to furnish items and/or services in accordance with all requirements, including delivery, the state may re-purchase similar items from any other source without competitive bidding, and the original vendor may be liable to the state for any excess costs.

If a vendor is unable to complete delivery by the date specified, he must contact the using agency. However, the agency is not required to accept a delay to the original delivery date. All deliveries are subject to inspection and receiving procedure rules as established by the State of New Hampshire. Deliveries are not considered accepted until compliance with these rules has been established. State personnel signatures on shipping documents shall signify only the receipt of shipments. All deliveries shall be FOB Destination.

**6. INVOICING.** All invoices must be in triplicate showing Order Number, Unit and Extension Prices and discounts allowed. A separate invoice shall be submitted for each order. Unless otherwise noted on the invitation to bid or purchase order, payment will not be due until thirty (30) days after all services have been completed, or all items have been delivered, inspected and accepted or the invoice has been received at the agency business office, whichever is later.

**7. PERSONNEL.**

**7.1.** The Vendor shall disclose in writing the names of all owners (5% or more), directors, officers, employees, agents or subcontractors who are also officials or employees of the State of New Hampshire. Any change in this information shall be reported in writing within fifteen (15) days of their occurrence.

**7.2.** The person signing this agreement on behalf of the State, or his or her delegee ("Contracting Officer") shall be the State's representative for purposes of this agreement. In the event of any dispute concerning the interpretation of this agreement, the Contracting Officer's decision shall be final.

**8. EVENT OF DEFAULT; REMEDIES.**

**8.1.** Any one or more of the following acts or omissions of the Vendor shall constitute an event of default hereunder ("Events of Default"):

**8.1.1.** failure to deliver the goods or services satisfactorily or on schedule; or

**8.1.2.** failure to submit any report required hereunder; or

**8.1.3.** failure to perform any of the other covenants and conditions of this agreement.

**8.2.** Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

**8.2.1.** give the Vendor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this agreement, effective two (2) days after giving the Vendor notice of termination; and

**8.2.2.** give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under this agreement and ordering that the portion of the Contract Price, which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the State determines that the Vendor has cured the Event of Default, shall never be paid to the Vendor; and

**8.2.3.** set off against any other obligation the State may owe to the Vendor any damages the State suffers by reason of any Event of Default; and

**8.2.4.** treat the agreement as breached and pursue any of its remedies at law or in equity, or both.

**9. WAIVER OF BREACH.** No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event, or any subsequent Event. No express failure of any Event of Default shall be deemed a waiver of any provision hereof. No such failure or waiver shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other default on the part of the Vendor.

**10. VENDOR'S RELATION TO THE STATE.** In the performance of this agreement the Vendor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Vendor nor any of its officers, employees, agents or members shall have authority to bind the State nor are they entitled to any of the benefits, workmen's compensation or emoluments provided by the State to its employees.

**11. ASSIGNMENT AND SUBCONTRACTS.** The Vendor shall not assign, or otherwise transfer any interest in this agreement without the prior written consent of the State. No work required by this contract shall be subcontracted without the prior written consent of the State.

**12. INDEMNIFICATION.** The contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Vendor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this agreement.

**12.1 PATENT PROTECTION.** The seller agrees to indemnify and defend the State of New Hampshire from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the State of New Hampshire harmless from any liability arising under RSA 382-A:2-312(3). (Uniform Commercial Code).

**13. TOXIC SUBSTANCES.** In compliance with RSA 277-A known as the Workers Right to Know Act, the vendor shall provide Material Safety Data Sheets with the delivery of any and all products covered by said law.

**14. NOTICE.** Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given below.

**15. AMENDMENT.** This agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto.

**16. CONSTRUCTION OF AGREEMENT AND TERMS.** This agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns.

**17. ADDITIONAL PROVISIONS.** The additional provisions (if any) have been set forth as Exhibit "A" hereto.

**18. ENTIRE AGREEMENT.** This agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings relating hereto.

# BID INVITATION FOR: ACCESSIBLE SMALL BODY ON CHASSIS VEHICLES

**PURPOSE:**
The purpose of this bid invitation is to establish a contract in the form of a purchase order for supplying the State of New Hampshire with ACCESSIBLE SMALL BODY ON CHASSIS VEHICLES, in accordance with the requirements of this bid invitation and any resulting order. These items shall be a one-time order with delivery required to the location indicated in the F.O.B. section of this bid invitation.

**SPECIFICATION COMPLIANCE:**
Bidder's offer must meet or exceed the required specifications as written.

**Note: Vendors must meet specifications as written. Any proposed changes to the specifications must be submitted in writing, to the Bureau of Purchase and Property (fax requests accepted) five (5) working days prior to the bid opening**

**AGENCY ACCEPTANCE:**
Upon product delivery, the agency will accomplish a product inspection, to ensure that all specifications of this bid have been met. Upon product acceptance, the agency will acknowledge acceptance by submitting payment approval. The agency will submit any and all discrepancies to the bidder within 10 days of receipt, and all discrepancies will be rectified prior to payment.

**VENDOR ACCEPTANCE OF BID CONTENT:**
Bidder must carefully read and understand the information and documents contained in this RFB. The contents of the bid of the successful Vendor will become contractual obligations upon award of this contract. Failure of the successful Bidder to accept these obligations while participating in this contract will result in cancellation of the award.

Any questions regarding the content of this RFB must be resolved during the Inquiry Period and changed by Addenda. Otherwise, any proposal making exceptions to any of the terms and conditions of the RFB will be rejected.

Unless otherwise specified by the Bureau of Purchase and Property in this bid invitation document, all equipment offered by the bidder must be new; shall not be used, rebuilt, refurbished; shall not have been used as demonstration equipment and shall not have been placed anywhere for evaluation purposes.

**VENDOR CERTIFICATIONS**
All bidders must be duly registered as a vendor authorized to conduct business in the State of New Hampshire.

**STATE OF NEW HAMPSHIRE VENDOR APPLICATION**.
Bidders must have a completed Vendor Application and W-9 Form on file with the NH Bureau of Purchase and Property. See the following website for information on obtaining and filing the required forms (no fee):
http://www.admin.state.nh.us/purchasing

**NEW HAMPSHIRE SECRETARY OF STATE REGISTRATION**
A person or persons conducting business under any name other than his/her own legal name must register with the NH Secretary of State. Businesses are classified as 'Domestic' (in-state) or 'Foreign' (out-of-state). Please visit the following website to find out more about the requirements and filing fees for both classifications: http://www.nh.gov/sos/corporate

**WARRANTY REQUIREMENTS:**
Manufacturer's United States warranty shall apply for all items in this bid invitation. This warranty supersedes any prior or conflicting term or statement.

**BID PRICES:**
Bid prices shall include delivery and all other costs. Bid prices should be government and/or educationally discounted prices.

**OFFER:**
Successful bidder hereby offers to sell the required items to the State of New Hampshire at the following price(s):
**The unit prices and extensions indicated should be GSA, government and/or educationally discounted prices.**

**AWARD:**
The award of the contract shall be based upon the net low bid BY EACH REQUISITION indicated in the "offer" section of this bid invitation.

**REQUISITION NO.: 184668**

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

**BEHAVIOR HEALTH & DEV. SERVICES**
**113 CROSBY ROAD**
**DOVER NH 03820**

| Qty | Unit | Description | Delivered Price |
|---|---|---|---|
| 1 +/- | EACH | NEW 2005 MODEL YEAR ACCESSIBLE SMALL BODY ON CHASSIS (VAN CUT AWAY) AS PER THE FOLLOWING MINIMUM SPECIFICATIONS LISTED AS REQUISITION NUMBER 184668 AND SPECIFIC SEATING DIAGRAM ALSO LISTED AS REQUISITION 184668 | $ _____ |
| | | CONTACT KEN HAZELTINE @ 603-271-3497 FOR INTERIOR & EXTERIOR COLOR REQUIREMENTS | |

Make and model _____
Bidder to submit detailed manufacturers specifications/literature

**DELIVERY TIME:**
Successful bidder hereby agrees to accomplish delivery of any item awarded within _____ days after receipt of the order.

**REQUISITION NO.: 184669**

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

**UNITED DEVELOPMENTAL SERVICES**
**35 MECHANIC STREET**
**LEBANON NH 03766**

| Qty | Unit | Description | Delivered Price |
|---|---|---|---|
| 1 +/- | EACH | NEW 2005 MODEL YEAR ACCESSIBLE SMALL BODY ON CHASSIS (VAN CUT AWAY) AS PER THE FOLLOWING MINIMUM SPECIFICATIONS LISTED AS REQUISITION NUMBER 184669 AND SPECIFIC SEATING DIAGRAM ALSO LISTED AS REQUISITION 184669 | $ _____ |
| | | CONTACT KEN HAZELTINE @ 603-271-3497 FOR INTERIOR & EXTERIOR COLOR REQUIREMENTS | |

Make and model _____
Bidder to submit detailed manufacturers specifications/literature

**DELIVERY TIME:**
Successful bidder hereby agrees to accomplish delivery of any item awarded within _____ days after receipt of the order.

**REQUISITION NO.: 184673**

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

KIMI NICHOLS CENTER, INC.
17 EAST ROAD
PLAISTOW NH 03865

| Qty | Unit | Description | Delivered Price |
|---|---|---|---|
| $1^{+/-}$ | EACH | NEW 2005 MODEL YEAR ACCESSIBLE SMALL BODY ON CHASSIS (VAN CUT AWAY) AS PER THE FOLLOWING MINIMUM SPECIFICATIONS LISTED AS REQUISITION NUMBER 184673 AND SPECIFIC SEATING DIAGRAM ALSO LISTED AS REQUISITION 184673 | $ _____ |
| | | CONTACT KEN HAZELTINE @ 603-271-3497 FOR INTERIOR & EXTERIOR COLOR REQUIREMENTS | |

Make and model _____
Bidder to submit detailed manufacturers specifications/literature

**DELIVERY TIME:**
Successful bidder hereby agrees to accomplish delivery of any item awarded within _____ days after receipt of the order.

**REQUISITION NO.: 184670**

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

**SPECIAL TRANSIT SERVICES**
**200 ZACHARY ROAD**
**MANCHESTER NH 03109**

| Qty | Unit | Description | Delivered Price |
|---|---|---|---|
| $1^{+/-}$ | EACH | NEW 2005 MODEL YEAR ACCESSIBLE SMALL BODY ON CHASSIS (VAN CUT AWAY) AS PER THE FOLLOWING MINIMUM SPECIFICATIONS LISTED AS REQUISITION NUMBER 184670 AND SPECIFIC SEATING DIAGRAM ALSO LISTED AS REQUISITION 184670 | $ _____ |
| | | CONTACT KEN HAZELTINE @ 603-271-3497 FOR INTERIOR & EXTERIOR COLOR REQUIREMENTS | |

Make and model _____
Bidder to submit detailed manufacturers specifications/literature

**DELIVERY TIME:**
Successful bidder hereby agrees to accomplish delivery of any item awarded within _____ days after receipt of the order.

**REQUISITION NO.: 184671**

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

**MONADNOCK FAMILY SERVICE**
**456 OLD STREET ROAD**
**PETERBOROUGH NH 03458**

| Qty | Unit | Description | Delivered Price |
|---|---|---|---|
| $1^{+/-}$ | EACH | NEW 2005 MODEL YEAR ACCESSIBLE SMALL BUS (VAN CUT AWAY) AS PER THE FOLLOWING MINIMUM SPECIFICATIONS LISTED AS REQUISITION NUMBER 184671 AND SPECIFIC SEATING DIAGRAM ALSO LISTED AS REQUISITION 184671 | $ _____ |
| | | CONTACT KEN HAZELTINE @ 603-271-3497 FOR INTERIOR & EXTERIOR COLOR REQUIREMENTS | |

Make and model _____
Bidder to submit detailed manufacturers specifications/literature

**DELIVERY TIME:**
Successful bidder hereby agrees to accomplish delivery of any item awarded within _____ days after receipt of the order.

**Accessible Small Body-on-Chassis (van cutaway)** 06/04

## 1 General Requirements

1.1 Bidder shall submit documentation certifying that proposed vehicle meets all applicable FMVSS regulations in effect on the date of manufacture. At a minimum the following standards shall be included in the certification:

| | | |
|---|---|---|
| FMVSS 207 | FMVSS 209 | FMVSS 209 |
| FMVSS 208 | FMVSS 210 | FMVSS 302 |

1.2 Bidder must certify compliance with Buy America regulations. Successful bidder must provide a list of vehicle components and subcomponents with manufacturer and place of manufacture, and cost or percentage of total vehicle cost, for each component or subcomponent. It is sufficient to list US-made components or subcomponents the cost of which totals more than 60% of the total vehicle cost, as required by Buy America regulations, rather than all vehicle components and subcomponents for purchase orders over $100,000.

1.3 Bidder shall submit with bid documentation of compliance with 49 CFR 665, FTA Bus Testing regulation. Test results shall be submitted to cover a **minimum of 5 Years and 150,000 miles.**

1.4 The Contractor shall comply with all applicable Federal, State, and Local regulations. In the event of any conflict between the requirements of this specification and any applicable legal requirement, then the legal requirement shall prevail.

1.5 Note: Whenever a specific trade or product name is used within this specification following statement applies: "...or approved equal with essentially comparable standards of quality, design and performance." <u>All requests for approved equals must be approved by the NHDOT prior to bid opening.</u>

1.6 The Contractor shall submit a signed copy of the FTA Required Clauses with bid documents.

1.7 Contractor must include New Hampshire Application for Motor Vehicle Title showing the Using Agency as the Owner and the New Hampshire Department of Transportation as First Lien Holder.

1.8 Using Agency is not allowed to add or delete from the specification with the vendor without approval of the New Hampshire Department of Transportation.

1.9 Vendor must sign and submit with bid documents a Federal Transit Administration's form "Transit Vehicle Manufacturer" (TVM) Certification.

## 2 Overall Dimensions

| | | |
|---|---|---|
| 2.1 | Length Overall (minimum) | 245" |
| 2.2 | Width (minimum) Exterior (max.) | 87" |
| | Interior (min.) | 80" |
| 2.3 | Height Overall (maximum) | 115" |
| 2.4 | G.V.W. Rating | 10,700 |
| 2.5 | Wheelbase, (minimum) | 138" |

## 3 Engine - Transmission - Drive Train

3.1 <u>Engine Gasoline</u>

3.1.1 5.4 liter, V-8 (minimum)

3.1.2 Factory engine heater

3.2 **Transmission**

3.2.1 3 or 4 speed, automatic - heavy duty (including overdrive)

3.2.2 OEM heavy duty auxiliary transmission oil cooler shall be provided if available.

3.3 Power Steering: Integral-type hydraulically assisted.

3.4 A nominal 4:10 ratio differential shall be provided.

3.5 The drive shaft, bearing and U-joint shall be the OEM standard for the GVWR specified. One or more guards for the drive shaft are required to prevent any section of the shaft from entering the vehicle or striking the ground in case of failure. Guards shall be 3/16" thickness steel (minimum) bolted to the frame.

## 4 Suspension System

4.1 Heaviest duty springs, shock absorbers, wheel bearings, hubs, and spindles available for the GVWR shall be provided. An additional leaf spring shall be installed at the lift to offset additional weight.

4.2 Front and rear stabilizer bars shall be provided (if available from original chassis manufacturer.)

## 5 Tires, Wheels

5.1 **Tires**

5.1.1 Vehicles shall be equipped with seven (7) premium tubeless, steel belted, black sidewall, all-weather radial tires largest size available from OEM for GVWR specified, minimum 50,000 mile rated.

5.1.2 All tires shall be electronically spin balanced to a minimum speed of 55 MPH.

5.2 **Wheels**

5.2.1 Vehicles shall be equipped with the heaviest duty 16" one-piece ventilated steel wheels recommended for the GVWR and tires specified.

5.2.2 Wheels shall be completely interchangeable.

5.3 **Spare Tire and Wheel**

5.3.1 Vehicle shall include an identical mounted tire and wheel with the vehicle. Spare shall be shipped loose with the vehicle.

## 6 Brakes

6.1 Service brakes shall be hydraulic self-adjusting power disc front and drum or disc rear.

6.2 The braking system shall be heavy duty and the largest offered by the manufacturer for the GVWR specified.

6.3 Parking brake shall be standard manufacturer's mechanical type, independent of the vehicle's service brake system.

6.4 The brakes shall be free of objectionable noise or squeal when applied during road test.

## 7 Exhaust System

7.1 Exhaust system shall be stainless steel in construction.

7.2 Exhaust tail pipe shall exit on the street side of the vehicle rear of the duel wheels.

## 8 Electrical System

8.1 The vehicle shall be supplied with an alternator-powered 12 volt extreme duty electrical system.
8.2 130 amp (minimum) high output alternator shall be provided.
8.3 Battery - Two (2) heavy duty 12-volt - 1150 combined CCA minimum for gas engines, combined 1400 CCA minimum for diesel engines, lead acid premium construction, maintenance free. Terminal shall be of different size to prevent incorrect cable installation.
8.4 All accessories and electrical equipment, with the exception of head lights, tail lights, parking lights, emergency flashers, interior lights, and lift, shall be wired through the vehicle ignition switch so as to be operative only with switch in the ON or accessory position.
8.5 Original manufacturer's vehicle wiring shall remain unchanged to the greatest extent practicable consistent with requirements of these specifications. A separate fuse panel for all add-on components located in an accessible area inside the vehicle shall be provided.
8.6 Wiring and terminals shall meet or exceed current federal and state vehicle requirements and be amply sized for both mechanical strength as well as to carry required currents without significant voltage drops. Wiring must be mechanically crimped.
8.7 Wiring shall be continuously enclosed in non-metallic loom meeting current SAE Standard J562a and be adequately supported and routed for protection from heat, moisture, solvents, corrosion, road debris, abrasion and tension. Wiring shall be of sufficient length to permit positioning and replacement of terminals without excessive tension. Protective grommets shall be provided at points where wiring penetrates metal or other material. Power wire to lift shall be securely clamped and protected.
8.8 Grounding of components shall be through polarized, shielded terminals wired to main structural ground points. Grounding through hinged doors or covers of any type is not acceptable.
8.9 Electrical components, which may require servicing or replacement shall be readily accessible through access panels or covers. Installation of aftermarket electrical components and systems in the engine compartment shall be eliminated to the greatest possible extent.
8.10 Complete wiring diagrams shall be provided with each vehicle.
8.11 All wires shall be color coded as indicated in wiring diagram for ease of service.
8.12 Maximum radio suppression available from OEM shall be provided.
8.13 An in-line circuit breaker of adequate capacity for circuit to wheelchair lift shall be provided in a readily accessible location.
8.14 All switches and controls necessary for the operation of the vehicle shall be conveniently located in the driver's area and shall provide for ease of operation and be appropriately marked. There shall be no switches or controls necessary for the operation of the vehicle mounted over the driver's windshield or door with the exception of a courtesy light.

## 9 Interior Climate Control

9.1 Deluxe heater and defroster with maximum BTU available shall be provided.
9.2 Two rear auxiliary heaters 35,000 BTU minimum, shall be provided. Blower switch with off/low/high positions (minimum), shall be provided.
9.3 All controls shall be located within easy reach of operator and shall be located on the control panel.
9.4 Air Conditioning:

9.4.1 Unit shall be Carrier Model AC-442 Max (dual compressors) or approved equal.
9.4.2 System output shall be minimum of 55,000 BTU/hr.
9.4.3 System shall be integrated with a compatible in-dash driver's seat evaporator unit with essentially comparable standards of design and performance.
9.4.4 Driver's in-dash A/C unit shall be separately controlled from the passenger area system. It shall include off/low/medium/high fan speed control. In-dash unit shall not interfere with removal or replacement of the engine cover.
9.4.5 Passenger area air conditioning system shall be separately controlled from a control station at the driver's position with an off/low/high (minimum) blower switch. All electronic relays, fuses and circuit breakers shall be located in one location inside vehicle for reliability and ease of repair.
9.4.6 Refrigerant hoses shall be double braided polyester yarn and nylon liner.
9.4.7 Refrigerant fittings shall Quick Click, double O-Ring utilizing one-piece clamping system.

9.5 When the ignition system is turned off, the rear auxiliary heater and air conditioning system shall be automatically shut down.

9.6 All air conditioning and heater hoses and wires that pass within twelve (12) inches of exhaust system shall be shielded in a manner to prevent heat damage to them.

**10 Interior Trim**

10.1 Interior panels shall harmonize with exterior color accent striping.

10.2 Ceiling trim panels shall be steel, melamine, ABS plastic, vinyl clad aluminum, smooth fiberglass gel coat or approved equal, applied in one or more sections with vinyl clad steel, aluminum or stainless steel trim strips covering panel joints. Panels shall be supported to prevent buckles, vibration, drumming or flexing and particular care shall be exercised to keep body light fixtures from weaving or bouncing when the vehicle is in service.

10.3 Sidewall trim panels shall be of the same material as listed for ceiling trim panels, applied as specified above. Horizontal trim molding of stainless steel or anodized aluminum, FRP or ABS plastic shall cover top of sidewall trim at base of windows (if needed to cover seam).

10.4 All interior panels, materials and treatments shall be flame retardant in conformance with FMVSS 302 and treated to be easily cleaned.
9.5 All protruding hazardous surfaces shall be eliminated.

**11 Seating** (Refer to diagram)

11.1 Passenger seats shall have full individual spring suspension for each passenger, contoured full lower back (lumbar) support, and ultra-thin backrest for optimum weight and hip-to-knee room. Frames shall be 1" tubular steel. Aisle seats will include a padded grab handle at the headrest area of the seatback.

11.2 **Seat Dimensions**

| | | |
|---|---|---|
| 11.2.1 | Seat width per person | 17.5" minimum |
| 11.2.2 | Seat depth: | 17" minimum |
| 11.2.3 | Seat back: | 19" minimum, 25" maximum, (as measured from top of seat bottom to the top of the seat back). |

11.3 Seat upholstering, both back and bottom cushion, shall be vertical or combination vertical and horizontal quilting. In addition front of bottom cushion shall be rolled. Foam

shall be contoured, dense, transit grade polyurethane with a minimum thickness of one and one half (1.5) inches.

11.4 Upholstery material shall be 36 oz/sq. yd. (minimum) transit vinyl. Colors shall be selected from manufacturer's standard colors.

11.5 All metal surfaces shall be chemically cleaned, iron phosphated, painted and baked to provide rugged, long lasting, rust resistant surface.

11.6 Each seat position shall be equipped with retractable passenger restraint belts. Seat belts shall be bolted through the floor, independent of seat, or bolted to seat frame.

11.7 Passenger seats shall be installed on a track system to permit convenient removal and rearrangement.

11.8 Any flip seat requested shall be equipped with a spring loaded device to prevent the bottom seat cushion from returning to the horizontal position. The locking device shall be constructed to be manually released to avoid accidental return during use. Additionally, flip seats shall be upholstered with same quality and color material as standard passenger seats.

11.9 The operator's seat shall be OEM with lumbar support and tilt back with four-way power base with arm rests and shall be equipped with automatically retractable lap and shoulder harness or approved equal.

## 12 Floor and Floor Covering

12.1 The subfloor shall be seven (7) ply ¾" thick (minimum) marine grade plywood sealed at all edges.

12.2 The subfloor shall be applied over corrosion resistant steel floor panels. Subfloor frame shall consist of 1" x 2" x 14 gauge (minimum) steel tubing welded together. Subfloor frame shall be mounted to OEM alternate frame spacers. Additionally, wheelhouse assemblies, made of corrosion resistant 12 gauge (minimum) steel, bolted, riveted or welded to floor assembly shall be included.

12.3 Subfloor assembly shall be mounted to vehicle chassis in a manner to minimize the road shock being transferred into vehicle body.

12.4 Floor is to be covered with RCA transit floor or approved equal. Flooring shall be smooth under seats and wheel wells and ribbed over aisle and step treads. The step treads shall have molded-in white step edges. Flooring color shall harmonize with vehicle interior.

12.5 RCA rubber flooring shall extend up the sides of the wall of the vehicle to side wall seat mounting track to produce a seamless cove molding.

## 13 Steps and Stepwell

13.1 Front step height from ground (no load) shall be 12.0" maximum. Individual risers shall be 9.5" maximum in height and in case of more than one riser, all shall be the same height. Step tread depth to be 8" minimum.

13.2 The stepwell shall be modular design twelve (12) gauge galvanized or galvaneal steel and shall be smoothly and continuously welded into OEM structure. Stepwell shall be adequately reinforced to prevent noticeable deflection when either step is loaded over the center half with a 300 pound static load.

13.3 Stepwell shall be completely enclosed and weather tight when passenger door is in the closed position.

## 14 Passenger Doors

### 14.1 Front Entrance Door:

14.1.1 The vehicle shall be equipped with a manually operated, double leaf, outward opening "transit style" door with molded, overlapping, safety seal at center, located opposite the driver.

14.1.2 The door opening device shall be a manual over-center type with self-locking adjustable length door control mechanism. The mechanism shall be adequately reinforced and supported, independent of the vehicle dashboard and capable of withstanding normal use and passenger abuse. The mounting shall allow for removal of vehicle engine cover without disassembly of mechanism.

14.1.3 The door shall have a clear opening width of 26" (minimum) as measured from inside edge to inside edge of door frame, and full height of 74" (minimum) clear "walk-in" headroom as measured from the top of the front step to the entrance header.

14.1.4 The door shall have upper and lower or full vision design tinted windows that conform to all applicable Federal and State Motor Vehicle Safety Standards.

### 14.2 Wheelchair Lift Door

14.2.1 Wheelchair lift door(s) shall be located on the right (curb) side of the vehicle, behind the rear wheels.

14.2.2 Wheelchair lift door shall provide 58" (minimum) of walk-in headroom as measured when lift is in full raised usable position. The lift door shall have a clear opening width adequate for ease of operation of the wheelchair lift being supplied with this vehicle and shall be ADA compliant.

14.2.3 Lift door shall be equipped with a metal safety device or gas strut to hold door securely in full open position when lift is in operation.

14.2.4 Lift door shall have glazed window that meets all applicable Federal and State Motor Vehicle Safety Standards.

### 14.3 Rear Door

14.3.1 Rear door shall be located in the center of rear body cap and aligned with the aisle. The door will be equipped with a metal safety device or gas strut to hold the door securely in full open position. The door will have tinted upper and lower full vision windows that conform to Federal Motor Vehicle Safety Standards (FMVSS).

### 14.4 Doors - General

14.4.1 Keys and locks for all doors except passenger entrance door are to be supplied.

14.4.2 All doors shall be properly sealed to prevent entry of air drafts and water into vehicle interior including spray from commercial vehicle wash equipment and driven rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash, salt and other exterior elements without cracking, leaking, loosening or deteriorating.

## 15 Windshield and Windows

15.1 Windshield and driver door shall be OEM glazed with laminated glass and uniformly tinted.

15.2 Two heavy duty electrical, three speed (intermittent, low and high speeds) windshield wipers and windshield washers shall be provided.

15.3 Side windows shall be a flat black aluminum framed T-sliding 29" x 38" window to meet all applicable Federal and State Motor Vehicle Safety Standards. They shall be Lucite SAR bronze BZ-2412 or tempered safety glass 25% to 35% light transmission, bronze or gray tint. Two of these windows, one on each side, shall be top hinged emergency exit type, with decals providing instructions as to their use.

15.4 All windows shall be fitted with durable, firmly installed weather seals to prevent the entrance of air and water, including spray from commercial vehicle wash equipment and driven rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash and salt and other exterior elements without cracking, leaking, loosening or deteriorating.

15.5 Drain holes shall be incorporated in the window sash frame to allow interior condensation to drain to the exterior. Sash construction shall be such that the sash drain shall prevent entrance or back-up of water into the vehicle.

15.6 Emergency exit window(s) of same construction as side windows shall be provided in rear of vehicle.

15.7 Two windows shall be provided in the transition panel between the windshield and ambulatory passenger door. The upper window shall be triangular and shall measure 14" wide at the bottom and 14" high minimum. The lower window shall be rectangular and the largest available from the body manufacturer. A single window design in the transition panel which essentially replaces and provides approximately the same surface area as the two window configuration described above is acceptable. Either window design shall eliminate the blind spot created by the transition panel.

## 16 Exterior Lighting

16.1 LED roof marker lights, red or amber, one at each corner, shall be provided.

16.2 LED marker lights, three (3) lamp cluster, amber or red lens, at front and rear shall be provided.

16.3 License plate holder at rear shall be illuminated.

## 17 Interior Lighting

17.1 Interior shall be illuminated so as to provide a minimum of 12 foot candles of illumination measured at 36" above the floor.

17.2 Driver courtesy light providing at least 2 foot-candles of illumination measured at the step tread shall light when driver door is opened. All other interior lights shall operate only when ignition is in "on" position, and stepwell and interior lights shall operate when passenger door is opened and ignition on. Additionally, a driver controlled override shall be provided to allow operation of all interior passenger courtesy lights when doors are closed and ignition on.

17.3 All passenger stepwells and doorways shall have at least 2 foot-candles of illumination, measured on the steptread or lift platform, when deployed at the vehicle floor level. Lighting shall be mounted so as not to create a hazard for passengers.

17.4 Passenger doorways shall have outside lights which, when the door is open, provide 1 foot-candle of illumination on the street surface for a distance of 3 feet from all points on the bottom step tread outer edge. Such lights shall be located below window level and shielded to protect the eyes of boarding and existing passengers.

**18 Finish and Color**

18.1 All exterior surfaces shall be smooth and free of visible fasteners, dents and other imperfections.

18.2 Exterior paint to be acrylic enamel or approved equal. Each vehicle shall be white with accent stripe package of harmonizing colors, chosen by the State of New Hampshire.

**19 Stanchions and Grab Rails**

19.1 All stanchions and grab rails shall be 1 1/4" stainless steel or stainless steel clad tubing. Vertical stanchions shall be secured top and bottom with barrel bolts to prevent twisting. All stanchions shall be mounted floor to ceiling in structural member.

19.2 All modesty panels shall be padded and covered with the same brand and color 36 oz. vinyl that covers the seats. Grab rails in stepwell area shall be stainless steel.

19.3 There shall be a vertical stanchion above the floor and modesty panel located at the rear of entrance door. Provision shall be made for grab rails at both sides of door, within easy reach from the ground to assist passengers in both boarding and exiting. Grab rails shall be mounted to stanchions and sidewalls.

19.4 A vertical stanchion and plexiglass panel shall be provided between passenger seat and lift mechanism.

19.5 A vertical stanchion and modesty panel shall be provided behind driver's seat. A clear plexiglass panel shall be installed filling the area between the stanchion and wall and grab rail to ceiling.

**20 Body and Roof**

20.1 All body parts shall be treated so as to prevent corrosion. Body construction shall have sufficient rigidity to prevent vibration, drumming or flexing in service.

20.2 All exterior joints shall be protected with appropriate sealant to prevent wind and water leakage.

20.3 The exterior side and roof panels shall be made of gel-coated fiberglass or aluminum, reinforced and of sufficient strength to support entire weight of fully loaded vehicle on its top or side, if overturned.

20.4 All fixed exterior panels shall be closed end riveted, molded or welded to body frame. Screws may be used in conjunction with a lock or rivet system. However, no exposed metal screws shall be permitted. Rivet spacing shall be in accordance with best practice of industry standards.

20.5 All posts in body side, and roof section shall be made of durable aluminum alloy or steel, channel or box construction securely welded to the under frame structure so that the entire assembly shall act as one unit without any movement at the joints. The end post shall be designed to resist shear which would result in case of collision.

20.6 A rollover cage of same design and construction as body side and roof sections shall be welded to chassis cab to protect driver in the event the vehicle rolls over.

20.7 Minimum interior headroom in aisle area to be 74".

20.8 All exposed under framing, underside of flooring, body panels below floor level, stepwells and wheel housing to be fully undercoated.

20.9 Roof gutters shall be installed over the windows and doors. Gutters shall be designed so as not to spill water on operator's exterior mirrors and intermediate drain holes shall not drain water on windows and doors.

20.10 The wheelhouses shall be made of corrosion resistant, 16 gauge (minimum), steel, bolted, riveted or welded to floor assembly. Ample clearance under load and under all positions of the suspension and steering geometry shall be provided between the wheel housing and tires.

20.11 OEM rustproofing warranty shall be provided, plus five (5) year 150,000 mile (minimum) rustproofing warranty on body.

20.12 The substructure shall be bolted to the OEM chassis frame on rubber grommets.

20.13 Vehicles shall be equipped with one Transpec Model 1122, or approved equal, roof ventilation/escape hatch centered in vehicle roof.

20.14 Roof ventilation/escape hatch features shall include ventilation, rubber gasket to prevent leaks and emergency exit capability.

**21 Insulation**

21.1 Inside walls and ceiling to be insulated with a minimum R-Factor of 6. Insulation package to include full length headliners and panels on ceiling, doors and body sides. Insulation shall be flame retardant.

21.2 The engine compartment shall be insulated from the passenger compartment with a minimum of 1" thick fiberglass material or equivalent so as to minimize van interior noise level, heat and fumes.

**22 Mirrors**

22.1 Each vehicle shall be equipped with two (2) 6"x 9" (minimum) exterior rear view mirrors with breakaway mounting brackets, one on each side. Right side front mirror shall be mounted so as to prevent contact with boarding passengers or pedestrians. Mirror arm shall be adequate length to provide rearward vision. Mirrors shall also include convex feature.

22.2 Standard OEM rear vision mirror with non-glare, day-night feature shall be provided.

22.3 A "crossover" mirror shall be installed on the front of vehicle, which enables driver to see directly in front of vehicle from seated position.

22.4 One 6" x 16"" minimum adjustable interior passenger viewing mirror shall be provided and mounted in such a way to allow the driver to easily view passenger activity in the vehicle from the driver's seat.

**23 Wheelchair Lift (Lift must meet requirements of 49 CFR Part 571 in effect at the time of manufacturer)**

23.1 Wheelchair lift shall be a BRAUN Millenium (commercial type model L917IB) or approved equal.

23.2 The wheelchair lift shall be electro-hydraulically or electro-mechanically operated, mounted on the curbside of the vehicle, and accessible via access doors.

23.3 Lift shall incorporate a power fold mechanism for platform.

23.4 The lift assembly shall safely accommodate a minimum load of 700 lbs. All power units, operating joints, linkage and mounting points to the body shall be certified by the manufacturer as being adequate for the minimum load requirement.

23.5 Lift shall be power-up and power or gravity-down.

23.6 There shall be a pressure relief built into the hydraulic system to prevent "jacking" of the vehicle, if the power remains on once the lift touches the ground.

23.7 An automatic safety barrier shall be provided at front of platform. Lift platform shall also have a barrier, which prevents a wheelchair from rolling off the edge closest to the vehicle until the platform is in its fully raised position. Each side of the lift platform shall have an 8" (minimum) barrier.

23.8 Lift shall be equipped with a manual override to permit lift to be raised or lowered manually in event of power failure or emergency.

23.9 Hand held lift control shall be provided with a minimum 5 ft. cord attached so lift may be operated from inside or outside of vehicle.

23.10 Lift platform shall be equipped with handrails on two sides, which move in tandem with the lift and which shall be graspable and provide support to standees throughout the entire lift operation. Handrail specifications are as follows:

23.10.1 A usable component (handle) at least 8 inches long with the lowest portion 30 inches (minimum) above the platform and the highest portion 38 inches (maximum) above the platform.

23.10.2 A grasping surface with a diameter of 1.25 to 1.5" and corner of radii of not less than 1/8 inch.

23.10.3 A minimum of 1.5" knuckle clearance from the nearest adjacent surface.

23.11 Adequate provisions for safely storing the lift controls, when not in use, shall be provided inside the vehicle.

23.12 All pulleys, chains, cables, etc., on both the lift platform shall be fully enclosed.

23.13 A complete set of operating instructions, schematics and a trouble shooting guide shall be included with each lift.

23.14 Lift platform shall be minimum 30" wide and 48" long.

22.14.1 Lift platform surfaces shall be free of any protrusions over 1/4" high and shall be slip resistant.

23.15 Control box shall be lightweight and weatherproof. Additionally, controls shall have sequence interlock to prevent folding of lift platform before it is in full raised position.

23.16 A safety device shall be provided that shall render lift inoperable when lift door is closed.

23.17 Each lift-equipped vehicle shall use an interlock between the lift controls and vehicle braking system, transmission or door, or shall provide other appropriate mechanisms or systems to ensure that the vehicle cannot be moved when the lift is not stowed.

23.18 In the event of a power or equipment failure the lift shall be designed to deploy no faster than 12 inches per second.

23.19 Lift platform shall move at a rate, which does not exceed 6 inches per second during lowering and lifting and 12 inches per second during deployment and stowage.

23.20 The boarding edge of lift platform shall have a band of color(s) running the full width of the step or edge, which contrasts from the lift surface.

23.21 The lift shall be warranted against defects, parts and labor, for a minimum of one year from date of acceptance of the vehicle.

**24 Wheelchair Securement System**

24.1 Securement devices and their attachments shall restrain a force in the forward longitudinal direction of up to 2,500 pounds per securement leg or clamping mechanism and a minimum of 5,000 pounds for each mobility aid.

24.2 The securement system shall be located as near to the accessible entrance as practicable and shall have a clear floor area of 30 inches by 48 inches. Flip seats may be installed in the securement area but shall not obstruct the clear floor area.

24.3 Wheelchair securement system shall be Q-Straint Q-8100-A1SC or approved equal, to secure wheelchairs facing forward, and must comply fully with Americans with Disabilities Act requirements.

24.4 Wheelchair tie down and occupant restraint shall consist of four slide and click floor anchors and shall have separate lap restraint for the occupant.

24.5 Floor anchorage points shall be usable for front or rear tie downs. Anchorage points in the passenger aisle shall be recessed and as flush with the floor as possible . Floor area shall be sealed prior to anchorage point installation to prevent the intrusion of water. Anchorage points shall be secured in accordance with California Highway Patrol Regulation Title V - Register 77, Number 22 5-8-77.

24.6 Means shall be provided to safely and securely store tie-down straps in Q-Straint storage bags anchored to the side wall so that the bottom of the bag rests on the floor. Bags shall be mounted in a manner that they do not interfere with securement operations, encroach the aisle, doorways or create a tripping hazard.

**25 Miscellaneous**

25.1 Maximum (heavy duty) radiator size and cooling fan available shall be provided. Radiator shall be equipped with surge tank if available from chassis manufacture. Coolant provided per State Standard Specification (-34°F).

25.2 Vehicle shall be equipped with a 30 gallon (minimum) fuel tank(s).

25.3 Indicating devices shall be gauge type and include Voltmeter, Oil Pressure Gauge, Engine Temperature Gauge, Fuel Tank Level Gauge, Speedometer with Odometer.

25.4 Audible backup alarm to be installed.

25.5 Front and rear Romeo Rim Help Bumpers, or approved equal, shall be provided.

25.6 Dual horns shall be provided.

25.7 Driver's sun visor shall be provided.

25.8 Vehicle shall be equipped with front and rear mud flaps.

25.9 A minimum five (5) pound dry powder type fire extinguisher, with gauge and hose, U.L. approved shall be provided, securely mounted vertically in an easily accessible location inside vehicle.

25.10 A three (3) triangle reflector kit shall be provided and securely mounted in an easily accessible location.

25.11 A standard 12-unit first aid kit shall be provided.

25.12 Vehicle shall be delivered with chassis manufacturer's shop manuals and "As Built" shop manuals.

25.13 All brackets and fasteners for attaching front and rear license plates to the vehicle shall be provided.

25.14 Vehicle shall be equipped with Tie Tech, Inc. Safe-Cut webbing cutter and Evac-Aid evacuation blanket or approved equal, securely mounted in a location easily accessible to the driver or stored in a compartment.

25.15 Vehicle shall be equipped with OEM standard AM/FM stereo (front and rear, four speakers) radio-compact disc player.

25.16 Vehicle shall be equipped with drivers storage compartment with latching cover over the windshield area.

25.17 Vehicle must include New Hampshire Transit logo 8" x 18" applied to left side of transit door area. Final location to be determined by NHDOT.

25.18 Vehicle will be equipped with two (2) US DOT approved rubber wheel chocks. Wooden wheel chocks will not be acceptable.

**26 Quality Assurance and Delivery**

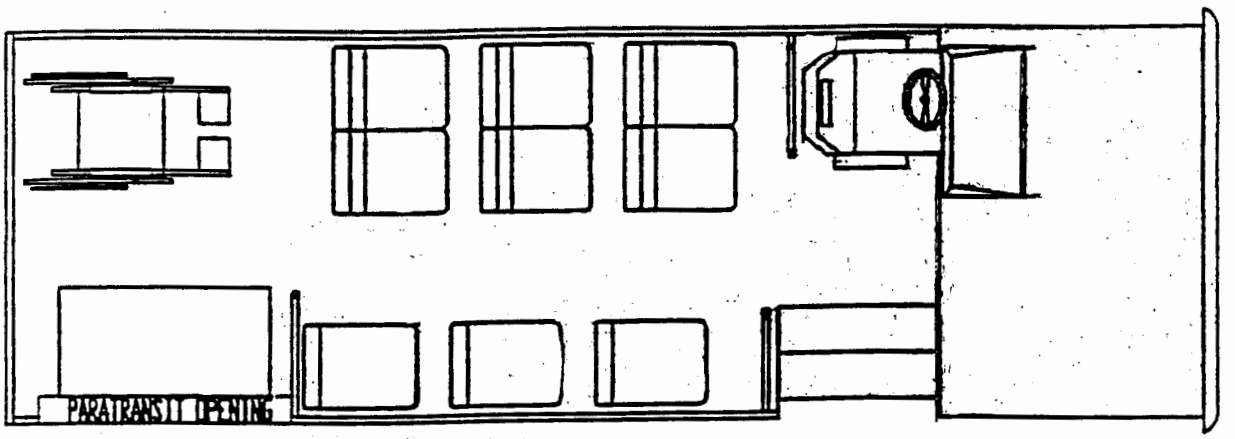
26.1 The NHDOT shall have the right to inspect the vehicles during production and final assembly, prior to delivery.

26.2 The NHDOT or receiving agency will carry out a thorough inspection upon delivery prior to acceptance of the vehicle, including water leak test and road test, and may refuse delivery should defects be found.

26.3 Vendor shall include a detailed description of the warranty provisions covering the proposed vehicle and necessary equipment, and full warranty detail and registration forms. The location of the provider of warranty repairs, within 200 miles of the receiving agency, shall be listed for each warranted item.

Requisition # 184668

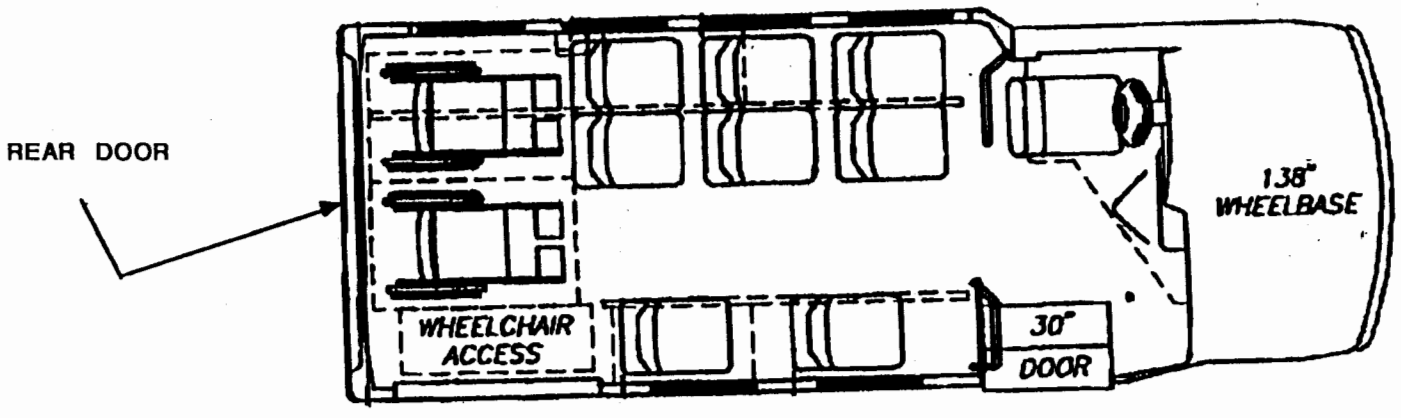
# ACCESSIBLE SMALL BODY ON CHASSIS




## 138" WEELBASE

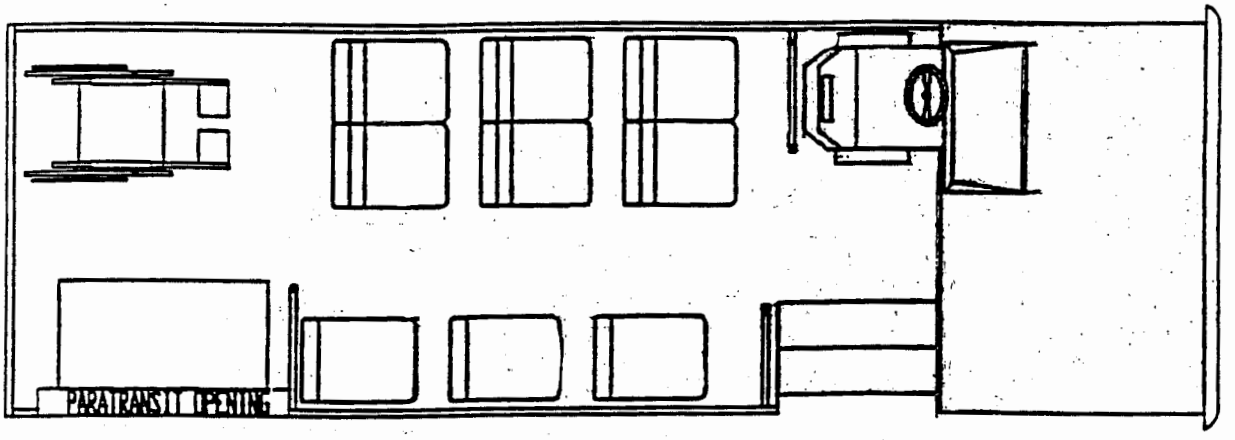
Requisition # 184669

ACCESSIBLE SMALL BODY ON CHASSIS



Requisition 184673

# ACCESSIBLE SMALL BODY ON CHASSIS




## 138" WEELBASE

**Accessible Small Body-on-Chassis (van cutaway)** 06/04

## 1 General Requirements

1.1 Bidder shall submit documentation certifying that proposed vehicle meets all applicable FMVSS regulations in effect on the date of manufacture. At a minimum the following standards shall be included in the certification:

| | | |
|---|---|---|
| FMVSS 207 | FMVSS 209 | FMVSS 209 |
| FMVSS 208 | FMVSS 210 | FMVSS 302 |

1.2 Bidder must certify compliance with Buy America regulations. Successful bidder must provide a list of vehicle components and subcomponents with manufacturer and place of manufacture, and cost or percentage of total vehicle cost, for each component or subcomponent. It is sufficient to list US-made components or subcomponents the cost of which totals more than 60% of the total vehicle cost, as required by Buy America regulations, rather than all vehicle components and subcomponents for purchase orders over $100,000.

1.3 Bidder shall submit with bid documentation of compliance with 49 CFR 665, FTA Bus Testing regulation. Test results shall be submitted to cover a **minimum of 5 Years and 150,000 miles.**

1.4 The Contractor shall comply with all applicable Federal, State, and Local regulations. In the event of any conflict between the requirements of this specification and any applicable legal requirement, then the legal requirement shall prevail.

1.5 Note: Whenever a specific trade or product name is used within this specification following statement applies: "...or approved equal with essentially comparable standards of quality, design and performance." <u>All requests for approved equals must be approved by the NHDOT prior to bid opening.</u>

1.6 The Contractor shall submit a signed copy of the FTA Required Clauses with bid documents.

1.7 Contractor must include New Hampshire Application for Motor Vehicle Title showing the Using Agency as the Owner and the New Hampshire Department of Transportation as First Lien Holder.

1.8 Using Agency is not allowed to add or delete from the specification with the vendor without approval of the New Hampshire Department of Transportation.

1.9 Vendor must sign and submit with bid documents a Federal Transit Administration's form "Transit Vehicle Manufacturer" (TVM) Certification.

## 2 Overall Dimensions

| | | |
|---|---|---|
| 2.1 | Length Overall (minimum) | 245" |
| 2.2 | Width (minimum) Exterior (max.) | 87" |
| | Interior (min.) | 80" |
| 2.3 | Height Overall (maximum) | 115" |
| 2.4 | G.V.W. Rating | 10,700 |
| 2.5 | Wheelbase, (minimum) | 138" |

## 3 Engine - Transmission - Drive Train

3.1 <u>**Engine Gasoline**</u>

3.1.1 5.4 liter, V-8 (minimum)

3.1.2 Factory engine heater

3.2 Transmission
- 3.2.1 3 or 4 speed, automatic - heavy duty (including overdrive)
- 3.2.2 OEM heavy duty auxiliary transmission oil cooler shall be provided if available.

3.3 Power Steering: Integral-type hydraulically assisted.

3.4 A nominal 4:10 ratio differential shall be provided.

3.5 The drive shaft, bearing and U-joint shall be the OEM standard for the GVWR specified. One or more guards for the drive shaft are required to prevent any section of the shaft from entering the vehicle or striking the ground in case of failure. Guards shall be 3/16" thickness steel (minimum) bolted to the frame.

## 4 Suspension System

4.1 Heaviest duty springs, shock absorbers, wheel bearings, hubs, and spindles available for the GVWR shall be provided. An additional leaf spring shall be installed at the lift to offset additional weight.

4.2 Front and rear stabilizer bars shall be provided (if available from original chassis manufacturer.)

## 5 Tires, Wheels

5.1 **Tires**
- 5.1.1 Vehicles shall be equipped with seven (7) premium tubeless, steel belted, black sidewall, all-weather radial tires largest size available from OEM for GVWR specified, minimum 50,000 mile rated.
- 5.1.2 All tires shall be electronically spin balanced to a minimum speed of 55 MPH.

5.2 **Wheels**
- 5.2.1 Vehicles shall be equipped with the heaviest duty 16" one-piece ventilated steel wheels recommended for the GVWR and tires specified.
- 5.2.2 Wheels shall be completely interchangeable.

5.3 **Spare Tire and Wheel**
- 5.3.1 Vehicle shall include an identical mounted tire and wheel with the vehicle. Spare shall be shipped loose with the vehicle.

## 6 Brakes

6.1 Service brakes shall be hydraulic self-adjusting power disc front and drum or disc rear.

6.2 The braking system shall be heavy duty and the largest offered by the manufacturer for the GVWR specified.

6.3 Parking brake shall be standard manufacturer's mechanical type, independent of the vehicle's service brake system.

6.4 The brakes shall be free of objectionable noise or squeal when applied during road test.

## 7 Exhaust System

7.1 Exhaust system shall be stainless steel in construction.

7.2 Exhaust tail pipe shall exit on the street side of the vehicle rear of the duel wheels.

## 8 Electrical System

8.1 The vehicle shall be supplied with an alternator-powered 12 volt extreme duty electrical system.
8.2 130 amp (minimum) high output alternator shall be provided.
8.3 Battery - Two (2) heavy duty 12-volt - 1150 combined CCA minimum for gas engines, combined 1400 CCA minimum for diesel engines, lead acid premium construction, maintenance free. Terminal shall be of different size to prevent incorrect cable installation.
8.4 All accessories and electrical equipment, with the exception of head lights, tail lights, parking lights, emergency flashers, interior lights, and lift, shall be wired through the vehicle ignition switch so as to be operative only with switch in the ON or accessory position.
8.5 Original manufacturer's vehicle wiring shall remain unchanged to the greatest extent practicable consistent with requirements of these specifications. A separate fuse panel for all add-on components located in an accessible area inside the vehicle shall be provided.
8.6 Wiring and terminals shall meet or exceed current federal and state vehicle requirements and be amply sized for both mechanical strength as well as to carry required currents without significant voltage drops. Wiring must be mechanically crimped.
8.7 Wiring shall be continuously enclosed in non-metallic loom meeting current SAE Standard J562a and be adequately supported and routed for protection from heat, moisture, solvents, corrosion, road debris, abrasion and tension. Wiring shall be of sufficient length to permit positioning and replacement of terminals without excessive tension. Protective grommets shall be provided at points where wiring penetrates metal or other material. Power wire to lift shall be securely clamped and protected.
8.8 Grounding of components shall be through polarized, shielded terminals wired to main structural ground points. Grounding through hinged doors or covers of any type is not acceptable.
8.9 Electrical components, which may require servicing or replacement shall be readily accessible through access panels or covers. Installation of aftermarket electrical components and systems in the engine compartment shall be eliminated to the greatest possible extent.
8.10 Complete wiring diagrams shall be provided with each vehicle.
8.11 All wires shall be color coded as indicated in wiring diagram for ease of service.
8.12 Maximum radio suppression available from OEM shall be provided.
8.13 An in-line circuit breaker of adequate capacity for circuit to wheelchair lift shall be provided in a readily accessible location.
8.14 All switches and controls necessary for the operation of the vehicle shall be conveniently located in the driver's area and shall provide for ease of operation and be appropriately marked. There shall be no switches or controls necessary for the operation of the vehicle mounted over the driver's windshield or door with the exception of a courtesy light.

## 9 Interior Climate Control

9.1 Deluxe heater and defroster with maximum BTU available shall be provided.
9.2 Two rear auxiliary heaters 35,000 BTU minimum, shall be provided. Blower switch with off/low/high positions (minimum), shall be provided.
9.3 All controls shall be located within easy reach of operator and shall be located on the control panel.
9.4 Air Conditioning:

9.4.1 Unit shall be Carrier Model AC-442 Max (dual compressors) or approved equal.
9.4.2 System output shall be minimum of 55,000 BTU/hr.
9.4.3 System shall be integrated with a compatible in-dash driver's seat evaporator unit with essentially comparable standards of design and performance.
9.4.4 Driver's in-dash A/C unit shall be separately controlled from the passenger area system. It shall include off/low/medium/high fan speed control. In-dash unit shall not interfere with removal or replacement of the engine cover.
9.4.5 Passenger area air conditioning system shall be separately controlled from a control station at the driver's position with an off/low/high (minimum) blower switch. All electronic relays, fuses and circuit breakers shall be located in one location inside vehicle for reliability and ease of repair.
9.4.6 Refrigerant hoses shall be double braided polyester yarn and nylon liner.
9.4.7 Refrigerant fittings shall Quick Click, double O-Ring utilizing one-piece clamping system.

9.5 When the ignition system is turned off, the rear auxiliary heater and air conditioning system shall be automatically shut down.

9.6 All air conditioning and heater hoses and wires that pass within twelve (12) inches of exhaust system shall be shielded in a manner to prevent heat damage to them.

**10 Interior Trim**

10.1 Interior panels shall harmonize with exterior color accent striping.

10.2 Ceiling trim panels shall be steel, melamine, ABS plastic, vinyl clad aluminum, smooth fiberglass gel coat or approved equal, applied in one or more sections with vinyl clad steel, aluminum or stainless steel trim strips covering panel joints. Panels shall be supported to prevent buckles, vibration, drumming or flexing and particular care shall be exercised to keep body light fixtures from weaving or bouncing when the vehicle is in service.

10.3 Sidewall trim panels shall be of the same material as listed for ceiling trim panels, applied as specified above. Horizontal trim molding of stainless steel or anodized aluminum, FRP or ABS plastic shall cover top of sidewall trim at base of windows (if needed to cover seam).

10.4 All interior panels, materials and treatments shall be flame retardant in conformance with FMVSS 302 and treated to be easily cleaned.
9.5 All protruding hazardous surfaces shall be eliminated.

**11 Seating** (Refer to diagram)

11.1 Passenger seats shall have full individual spring suspension for each passenger, contoured full lower back (lumbar) support, and ultra-thin backrest for optimum weight and hip-to-knee room. Frames shall be 1" tubular steel. Aisle seats will include a padded grab handle at the headrest area of the seatback.

11.2 **Seat Dimensions**

| | | |
|---|---|---|
| 11.2.1 | Seat width per person | 17.5" minimum |
| 11.2.2 | Seat depth: | 17" minimum |
| 11.2.3 | Seat back: | 19" minimum, 25" maximum, (as measured from top of seat bottom to the top of the seat back). |

11.3 Seat upholstering, both back and bottom cushion, shall be vertical or combination vertical and horizontal quilting. In addition front of bottom cushion shall be rolled. Foam

shall be contoured, dense, transit grade polyurethane with a minimum thickness of one and one half (1.5) inches.

11.4 Upholstery material shall be 36 oz/sq. yd. (minimum) transit vinyl. Colors shall be selected from manufacturer's standard colors.

11.5 All metal surfaces shall be chemically cleaned, iron phosphated, painted and baked to provide rugged, long lasting, rust resistant surface.

11.6 Each seat position shall be equipped with retractable passenger restraint belts. Seat belts shall be bolted through the floor, independent of seat, or bolted to seat frame.

11.7 Passenger seats shall be installed on a track system to permit convenient removal and rearrangement.

11.8 Any flip seat requested shall be equipped with a spring loaded device to prevent the bottom seat cushion from returning to the horizontal position. The locking device shall be constructed to be manually released to avoid accidental return during use. Additionally, flip seats shall be upholstered with same quality and color material as standard passenger seats.

11.9 The operator's seat shall be OEM with lumbar support and tilt back with four-way power base with arm rests and shall be equipped with automatically retractable lap and shoulder harness or approved equal.

## 12 Floor and Floor Covering

12.1 The subfloor shall be seven (7) ply ¾" thick (minimum) marine grade plywood sealed at all edges.

12.2 The subfloor shall be applied over corrosion resistant steel floor panels. Subfloor frame shall consist of 1" x 2" x 14 gauge (minimum) steel tubing welded together. Subfloor frame shall be mounted to OEM alternate frame spacers. Additionally, wheelhouse assemblies, made of corrosion resistant 12 gauge (minimum) steel, bolted, riveted or welded to floor assembly shall be included.

12.3 Subfloor assembly shall be mounted to vehicle chassis in a manner to minimize the road shock being transferred into vehicle body.

12.4 Floor is to be covered with RCA transit floor or approved equal. Flooring shall be smooth under seats and wheel wells and ribbed over aisle and step treads. The step treads shall have molded-in white step edges. Flooring color shall harmonize with vehicle interior.

12.5 RCA rubber flooring shall extend up the sides of the wall of the vehicle to side wall seat mounting track to produce a seamless cove molding.

## 13 Steps and Stepwell

13.1 Front step height from ground (no load) shall be 12.0" maximum. Individual risers shall be 9.5" maximum in height and in case of more than one riser, all shall be the same height. Step tread depth to be 8" minimum.

13.2 The stepwell shall be modular design twelve (12) gauge galvanized or galvaneal steel and shall be smoothly and continuously welded into OEM structure. Stepwell shall be adequately reinforced to prevent noticeable deflection when either step is loaded over the center half with a 300 pound static load.

13.3 Stepwell shall be completely enclosed and weather tight when passenger door is in the closed position.

## 14 Passenger Doors

14.1 **Front Entrance Door:**

14.1.1 The vehicle shall be equipped with a manually operated, double leaf, outward opening "transit style" door with molded, overlapping, safety seal at center, located opposite the driver.

14.1.2 The door opening device shall be a manual over-center type with self-locking adjustable length door control mechanism. The mechanism shall be adequately reinforced and supported, independent of the vehicle dashboard and capable of withstanding normal use and passenger abuse. The mounting shall allow for removal of vehicle engine cover without disassembly of mechanism.

14.1.3 The door shall have a clear opening width of 26" (minimum) as measured from inside edge to inside edge of door frame, and full height of 74" (minimum) clear "walk-in" headroom as measured from the top of the front step to the entrance header.

14.1.4 The door shall have upper and lower or full vision design tinted windows that conform to all applicable Federal and State Motor Vehicle Safety Standards.

14.2 **Wheelchair Lift Door**

14.2.1 Wheelchair lift door(s) shall be located on the right (curb) side of the vehicle, behind the rear wheels.

14.2.2 Wheelchair lift door shall provide 58" (minimum) of walk-in headroom as measured when lift is in full raised usable position. The lift door shall have a clear opening width adequate for ease of operation of the wheelchair lift being supplied with this vehicle and shall be ADA compliant.

14.2.3 Lift door shall be equipped with a metal safety device or gas strut to hold door securely in full open position when lift is in operation.

14.2.4 Lift door shall have glazed window that meets all applicable Federal and State Motor Vehicle Safety Standards.

14.3 **Rear Door**

14.3.1 Rear door shall be located in the center of rear body cap and aligned with the aisle. The door will be equipped with a metal safety device or gas strut to hold the door securely in full open position. The door will have tinted upper and lower full vision windows that conform to Federal Motor Vehicle Safety Standards (FMVSS).

14.4 **Doors - General**

14.4.1 Keys and locks for all doors except passenger entrance door are to be supplied.

14.4.2 All doors shall be properly sealed to prevent entry of air drafts and water into vehicle interior including spray from commercial vehicle wash equipment and driven rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash, salt and other exterior elements without cracking, leaking, loosening or deteriorating.

## 15 Windshield and Windows

15.1 Windshield and driver door shall be OEM glazed with laminated glass and uniformly tinted.

15.2 Two heavy duty electrical, three speed (intermittent, low and high speeds) windshield wipers and windshield washers shall be provided.

15.3 Side windows shall be a flat black aluminum framed T-sliding 29" x 38" window to meet all applicable Federal and State Motor Vehicle Safety Standards. They shall be Lucite SAR bronze BZ-2412 or tempered safety glass 25% to 35% light transmission, bronze or gray tint. Two of these windows, one on each side, shall be top hinged emergency exit type, with decals providing instructions as to their use.

15.4 All windows shall be fitted with durable, firmly installed weather seals to prevent the entrance of air and water, including spray from commercial vehicle wash equipment and driven rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash and salt and other exterior elements without cracking, leaking, loosening or deteriorating.

15.5 Drain holes shall be incorporated in the window sash frame to allow interior condensation to drain to the exterior. Sash construction shall be such that the sash drain shall prevent entrance or back-up of water into the vehicle.

15.6 Emergency exit window(s) of same construction as side windows shall be provided in rear of vehicle.

15.7 Two windows shall be provided in the transition panel between the windshield and ambulatory passenger door. The upper window shall be triangular and shall measure 14" wide at the bottom and 14" high minimum. The lower window shall be rectangular and the largest available from the body manufacturer. A single window design in the transition panel which essentially replaces and provides approximately the same surface area as the two window configuration described above is acceptable. Either window design shall eliminate the blind spot created by the transition panel.

## 16 Exterior Lighting

16.1 LED roof marker lights, red or amber, one at each corner, shall be provided.

16.2 LED marker lights, three (3) lamp cluster, amber or red lens, at front and rear shall be provided.

16.3 License plate holder at rear shall be illuminated.

## 17 Interior Lighting

17.1 Interior shall be illuminated so as to provide a minimum of 12 foot candles of illumination measured at 36" above the floor.

17.2 Driver courtesy light providing at least 2 foot-candles of illumination measured at the step tread shall light when driver door is opened. All other interior lights shall operate only when ignition is in "on" position, and stepwell and interior lights shall operate when passenger door is opened and ignition on. Additionally, a driver controlled override shall be provided to allow operation of all interior passenger courtesy lights when doors are closed and ignition on.

17.3 All passenger stepwells and doorways shall have at least 2 foot-candles of illumination, measured on the steptread or lift platform, when deployed at the vehicle floor level. Lighting shall be mounted so as not to create a hazard for passengers.

17.4 Passenger doorways shall have outside lights which, when the door is open, provide 1 foot-candle of illumination on the street surface for a distance of 3 feet from all points on the bottom step tread outer edge. Such lights shall be located below window level and shielded to protect the eyes of boarding and existing passengers.

**18 Finish and Color**

18.1 All exterior surfaces shall be smooth and free of visible fasteners, dents and other imperfections.

18.2 Exterior paint to be acrylic enamel or approved equal. Each vehicle shall be white with accent stripe package of harmonizing colors, chosen by the State of New Hampshire.

**19 Stanchions and Grab Rails**

19.1 All stanchions and grab rails shall be 1 1/4" stainless steel or stainless steel clad tubing. Vertical stanchions shall be secured top and bottom with barrel bolts to prevent twisting. All stanchions shall be mounted floor to ceiling in structural member.

19.2 All modesty panels shall be padded and covered with the same brand and color 36 oz. vinyl that covers the seats. Grab rails in stepwell area shall be stainless steel.

19.3 There shall be a vertical stanchion above the floor and modesty panel located at the rear of entrance door. Provision shall be made for grab rails at both sides of door, within easy reach from the ground to assist passengers in both boarding and exiting. Grab rails shall be mounted to stanchions and sidewalls.

19.4 A vertical stanchion and plexiglass panel shall be provided between passenger seat and lift mechanism.

19.5 A vertical stanchion and modesty panel shall be provided behind driver's seat. A clear plexiglass panel shall be installed filling the area between the stanchion and wall and grab rail to ceiling.

**20 Body and Roof**

20.1 All body parts shall be treated so as to prevent corrosion. Body construction shall have sufficient rigidity to prevent vibration, drumming or flexing in service.

20.2 All exterior joints shall be protected with appropriate sealant to prevent wind and water leakage.

20.3 The exterior side and roof panels shall be made of gel-coated fiberglass or aluminum, reinforced and of sufficient strength to support entire weight of fully loaded vehicle on its top or side, if overturned.

20.4 All fixed exterior panels shall be closed end riveted, molded or welded to body frame. Screws may be used in conjunction with a lock or rivet system. However, no exposed metal screws shall be permitted. Rivet spacing shall be in accordance with best practice of industry standards.

20.5 All posts in body side, and roof section shall be made of durable aluminum alloy or steel, channel or box construction securely welded to the under frame structure so that the entire assembly shall act as one unit without any movement at the joints. The end post shall be designed to resist shear which would result in case of collision.

20.6 A rollover cage of same design and construction as body side and roof sections shall be welded to chassis cab to protect driver in the event the vehicle rolls over.

20.7 Minimum interior headroom in aisle area to be 74".

20.8 All exposed under framing, underside of flooring, body panels below floor level, stepwells and wheel housing to be fully undercoated.

20.9 Roof gutters shall be installed over the windows and doors. Gutters shall be designed so as not to spill water on operator's exterior mirrors and intermediate drain holes shall not drain water on windows and doors.

20.10 The wheelhouses shall be made of corrosion resistant, 16 gauge (minimum), steel, bolted, riveted or welded to floor assembly. Ample clearance under load and under all positions of the suspension and steering geometry shall be provided between the wheel housing and tires.

20.11 OEM rustproofing warranty shall be provided, plus five (5) year 150,000 mile (minimum) rustproofing warranty on body.

20.12 The substructure shall be bolted to the OEM chassis frame on rubber grommets.

20.13 Vehicles shall be equipped with one Transpec Model 1122, or approved equal, roof ventilation/escape hatch centered in vehicle roof.

20.14 Roof ventilation/escape hatch features shall include ventilation, rubber gasket to prevent leaks and emergency exit capability.

**21 Insulation**

21.1 Inside walls and ceiling to be insulated with a minimum R-Factor of 6. Insulation package to include full length headliners and panels on ceiling, doors and body sides. Insulation shall be flame retardant.

21.2 The engine compartment shall be insulated from the passenger compartment with a minimum of 1" thick fiberglass material or equivalent so as to minimize van interior noise level, heat and fumes.

**22 Mirrors**

22.1 Each vehicle shall be equipped with two (2) 6"x 9" (minimum) exterior rear view mirrors with breakaway mounting brackets, one on each side. Right side front mirror shall be mounted so as to prevent contact with boarding passengers or pedestrians. Mirror arm shall be adequate length to provide rearward vision. Mirrors shall also include convex feature.

22.2 Standard OEM rear vision mirror with non-glare, day-night feature shall be provided.

22.3 A "crossover" mirror shall be installed on the front of vehicle, which enables driver to see directly in front of vehicle from seated position.

22.4 One 6" x 16"" minimum adjustable interior passenger viewing mirror shall be provided and mounted in such a way to allow the driver to easily view passenger activity in the vehicle from the driver's seat.

**23 Wheelchair Lift (Lift must meet requirements of 49 CFR Part 571 in effect at the time of manufacturer)**

23.1 Wheelchair lift shall be a BRAUN Millenium (commercial type model L917IB) or approved equal.

23.2 The wheelchair lift shall be electro-hydraulically or electro-mechanically operated, mounted on the curbside of the vehicle, and accessible via access doors.

23.3 Lift shall incorporate a power fold mechanism for platform.

23.4 The lift assembly shall safely accommodate a minimum load of 700 lbs. All power units, operating joints, linkage and mounting points to the body shall be certified by the manufacturer as being adequate for the minimum load requirement.

23.5 Lift shall be power-up and power or gravity-down.

23.6 There shall be a pressure relief built into the hydraulic system to prevent "jacking" of the vehicle, if the power remains on once the lift touches the ground.

23.7 An automatic safety barrier shall be provided at front of platform. Lift platform shall also have a barrier, which prevents a wheelchair from rolling off the edge closest to the vehicle until the platform is in its fully raised position. Each side of the lift platform shall have an 8" (minimum) barrier.

23.8 Lift shall be equipped with a manual override to permit lift to be raised or lowered manually in event of power failure or emergency.

23.9 Hand held lift control shall be provided with a minimum 5 ft. cord attached so lift may be operated from inside or outside of vehicle.

23.10 Lift platform shall be equipped with handrails on two sides, which move in tandem with the lift and which shall be graspable and provide support to standees throughout the entire lift operation. Handrail specifications are as follows:

23.10.1 A usable component (handle) at least 8 inches long with the lowest portion 30 inches (minimum) above the platform and the highest portion 38 inches (maximum) above the platform.

23.10.2 A grasping surface with a diameter of 1.25 to 1.5" and corner of radii of not less than 1/8 inch.

23.10.3 A minimum of 1.5" knuckle clearance from the nearest adjacent surface.

23.11 Adequate provisions for safely storing the lift controls, when not in use, shall be provided inside the vehicle.

23.12 All pulleys, chains, cables, etc., on both the lift platform shall be fully enclosed.

23.13 A complete set of operating instructions, schematics and a trouble shooting guide shall be included with each lift.

23.14 Lift platform shall be minimum 30" wide and 48" long.

22.14.1 Lift platform surfaces shall be free of any protrusions over 1/4" high and shall be slip resistant.

23.15 Control box shall be lightweight and weatherproof. Additionally, controls shall have sequence interlock to prevent folding of lift platform before it is in full raised position.

23.16 A safety device shall be provided that shall render lift inoperable when lift door is closed.

23.17 Each lift-equipped vehicle shall use an interlock between the lift controls and vehicle braking system, transmission or door, or shall provide other appropriate mechanisms or systems to ensure that the vehicle cannot be moved when the lift is not stowed.

23.18 In the event of a power or equipment failure the lift shall be designed to deploy no faster than 12 inches per second.

23.19 Lift platform shall move at a rate, which does not exceed 6 inches per second during lowering and lifting and 12 inches per second during deployment and stowage.

23.20 The boarding edge of lift platform shall have a band of color(s) running the full width of the step or edge, which contrasts from the lift surface.

23.21 The lift shall be warranted against defects, parts and labor, for a minimum of one year from date of acceptance of the vehicle.

**24 Wheelchair Securement System**

24.1 Securement devices and their attachments shall restrain a force in the forward longitudinal direction of up to 2,500 pounds per securement leg or clamping mechanism and a minimum of 5,000 pounds for each mobility aid.

24.2 The securement system shall be located as near to the accessible entrance as practicable and shall have a clear floor area of 30 inches by 48 inches. Flip seats may be installed in the securement area but shall not obstruct the clear floor area.

24.3 Wheelchair securement system shall be Q-Straint Q-8100-A1SC or approved equal, to secure wheelchairs facing forward, and must comply fully with Americans with Disabilities Act requirements.

24.4 Wheelchair tie down and occupant restraint shall consist of four slide and click floor anchors and shall have separate lap restraint for the occupant.

24.5 Floor anchorage points shall be usable for front or rear tie downs. Anchorage points in the passenger aisle shall be recessed and as flush with the floor as possible . Floor area shall be sealed prior to anchorage point installation to prevent the intrusion of water. Anchorage points shall be secured in accordance with California Highway Patrol Regulation Title V - Register 77, Number 22 5-8-77.

24.6 Means shall be provided to safely and securely store tie-down straps in Q-Straint storage bags anchored to the side wall so that the bottom of the bag rests on the floor. Bags shall be mounted in a manner that they do not interfere with securement operations, encroach the aisle, doorways or create a tripping hazard.

**25 Miscellaneous**

25.1 Maximum (heavy duty) radiator size and cooling fan available shall be provided. Radiator shall be equipped with surge tank if available from chassis manufacture. Coolant provided per State Standard Specification (-34°F).

25.2 Vehicle shall be equipped with a 30 gallon (minimum) fuel tank(s).

25.3 Indicating devices shall be gauge type and include Voltmeter, Oil Pressure Gauge, Engine Temperature Gauge, Fuel Tank Level Gauge, Speedometer with Odometer.

25.4 Audible backup alarm to be installed.

25.5 Front and rear Romeo Rim Help Bumpers, or approved equal, shall be provided.

25.6 Dual horns shall be provided.

25.7 Driver's sun visor shall be provided.

25.8 Vehicle shall be equipped with front and rear mud flaps.

25.9 A minimum five (5) pound dry powder type fire extinguisher, with gauge and hose, U.L. approved shall be provided, securely mounted vertically in an easily accessible location inside vehicle.

25.10 A three (3) triangle reflector kit shall be provided and securely mounted in an easily accessible location.

25.11 A standard 12-unit first aid kit shall be provided.

25.12 Vehicle shall be delivered with chassis manufacturer's shop manuals and "As Built" shop manuals.

25.13 All brackets and fasteners for attaching front and rear license plates to the vehicle shall be provided.

25.14 Vehicle shall be equipped with Tie Tech, Inc. Safe-Cut webbing cutter and Evac-Aid evacuation blanket or approved equal, securely mounted in a location easily accessible to the driver or stored in a compartment.

25.15 Vehicle shall be equipped with OEM standard AM/FM stereo (front and rear, four speakers) radio-compact disc player.

25.16 Vehicle shall be equipped with drivers storage compartment with latching cover over the windshield area.

25.17 Vehicle must include New Hampshire Transit logo 8" x 18" applied to left side of transit door area. Final location to be determined by NHDOT.

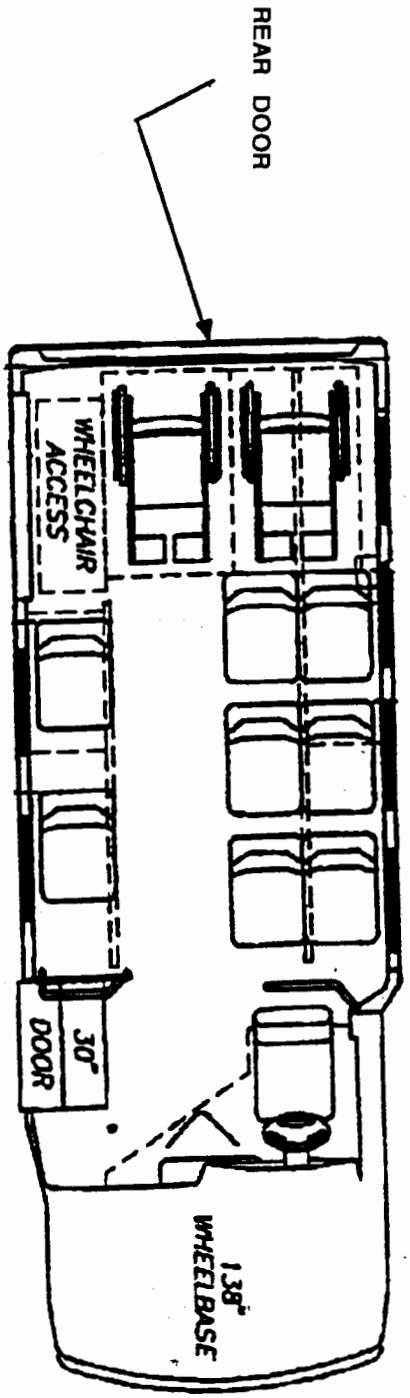
25.18 Vehicle will be equipped with two (2) US DOT approved rubber wheel chocks. Wooden wheel chocks will not be acceptable.

**26 Quality Assurance and Delivery**

26.1 The NHDOT shall have the right to inspect the vehicles during production and final assembly, prior to delivery.

26.2 The NHDOT or receiving agency will carry out a thorough inspection upon delivery prior to acceptance of the vehicle, including water leak test and road test, and may refuse delivery should defects be found.

26.3 Vendor shall include a detailed description of the warranty provisions covering the proposed vehicle and necessary equipment, and full warranty detail and registration forms. The location of the provider of warranty repairs, within 200 miles of the receiving agency, shall be listed for each warranted item.




ACCESSIBLE SMALL BODY ON CHASSIS

**Accessible Small Bus (van cutaway)** 6/04

## 1 General Requirements

1.1 Bidder shall submit documentation certifying that proposed vehicle meets all applicable FMVSS Regulations in effect on the date of manufacture. At a minimum the following standards shall be included in the certification:

| | |
|---|---|
| FMVSS 207 | FMVSS 210 |
| FMVSS 208 | FMVSS 220 |
| FMVSS 209 | FMVSS 302 |

1.2 Bidder shall certify compliance with Buy America regulations. Successful bidder must provide a list of vehicle components and subcomponents with manufacturer and place of manufacture, and cost or percentage of total vehicle cost, for each component or subcomponent. It is sufficient to list US-made components or subcomponents the cost of which totals more than 60% of the total vehicle cost, as required by Buy America regulations, rather than all vehicle components and subcomponents. (Purchase Orders over $100,000).

1.3 Bidder shall submit with bid documentation of compliance with 49 CFR 665, FTA Bus Testing regulation. Test result shall be submitted to cover a **minimum of 5 Years and 150,000 miles.**

1.4

1.5 The Contractor shall comply with all applicable Federal, State, and Local regulations. In the event of any conflict between the requirements of this specification and any applicable legal requirement, then the legal requirement shall prevail.

1.6 Note: Whenever a specific trade or product name is used within this specification, the following statement applies: "...or approved equal with essentially comparable standards of quality, design and performance." All requests for approved equals must be approved by the NHDOT prior to bid opening.

1.7 The Contractor shall submit a signed copy of the FTA Required Clauses for Purchases over $100,00.00 with the bid proposal.

1.8 Contractor must include New Hampshire Application for Motor Vehicle Title showing the Using Agency as the Owner and the New Hampshire Department of Transportation as First Lien Holder.

1.9 Using Agency is not allowed to add or delete from the specification with the vendor without approval of the New Hampshire Department of Transportation.

1.10 Vendor must sign and submit with bid documents a Federal Transit Administration's form "Transit Vehicle Manufacturer" (TVM) Certification.

## 2 Overall Dimensions

| | | | |
|---|---|---|---|
| 2.1 | Length Overall (minimum) | | 280" |
| 2.2 | Width (minimum) | Exterior (maximum) | 96" |
| | | Interior (minimum) | 91" |
| 2.3 | Seating (see diagrams) | | |
| 2.4 | Height Overall (nominal) | | 115" |
| 2.5 | **G.V.W. Rating** | | |

The GVW shall exceed the weight of a fully loaded vehicle (14,000 GVW minimum). A fully loaded vehicle equals the weight of a vehicle equipped to meet these specifications, verified by a weight ticket, plus the weight of the passengers (150 pounds for each ambulatory placement, 200 pounds for each wheelchair placement.)

2.6 Wheelbase, (minimum) 176"

**3 Engine - Transmission - Drive Train**

3.1 **Engine (Diesel)**

- 3.1.1 6.0 liter V8 (minimum)
- 3.1.2 Factory engine heater
- 3.1.3 Naturally aspirated
- 3.1.4 Water separator

3.2 **Transmission**

- 3.2.1 Heavy duty 4 speed, automatic with overdrive.
- 3.2.2 A chassis manufacturer's heavy duty auxiliary transmission oil cooler shall be provided. (if available from OEM)

3.3 Power Steering: Integral-type hydraulically assisted.

3.4 A nominal 4:10 ratio differential shall be provided.

3.5 The drive shaft, bearing and U-joint shall be the OEM standard for the GVWR specified. One or more guards for the drive shaft are required to prevent any section of the shaft from entering the vehicle or striking the ground in case of failure. Guards shall be 3/16" thickness steel (minimum) bolted to the frame.

**4 Suspension System**

4.1 Front axle capacity shall be 4,200 lbs. minimum.

4.2 Rear axle capacity shall be 7,600 lbs. minimum.

4.3 Heaviest duty springs, shock absorbers, wheel bearings, hubs, and spindles available for the GVWR shall be provided. An additional leaf spring, lift side shall be provided to offset additional weight.

4.4 Front and rear stabilizer bars shall be provided (if available from original chassis manufacturer.)

**5 Tires, Wheels**

5.1 **Tires**

- 5.1.1 Vehicles shall be equipped with seven (7) premium tubeless, steel belted, black sidewall, all-weather radial tires largest size available from OEM for GVWR specified, minimum 50,000 mile rated.
- 5.1.2 All tires shall be electronically spin balanced to a minimum speed of 55 MPH.

5.2 **Wheels**

- 5.2.1 Vehicles shall be equipped with the heaviest duty 16" one-piece ventilated steel wheels recommended for the GVWR and tires specified.
- 5.2.2 Wheels shall be completely interchangeable.

5.3 **Spare Tire and Wheel**

- 5.3.1 Vehicle shall include an identical mounted spare tire and wheel with the vehicle. Spare shall be shipped loose with the vehicle.

## 6 Brakes

6.1 Service brakes shall be hydraulic self-adjusting power disc front and drum or disc rear.
6.2 The braking system shall be heavy duty and the largest offered by the manufacturer for the GVWR specified.
6.3 Parking brake shall be standard manufacturer's mechanical type, independent of the vehicle's service brake system.
6.4 The brakes shall be free of objectionable noise or squeal when applied.

## 7 Exhaust System

7.1 Exhaust system shall be stainless steel in construction.
7.2 Exhaust tail pipe shall exit on the street side of the vehicle rear of the duel wheels.

## 8 Electrical System

8.1 The vehicle shall be supplied with an alternator-powered 12 volt extreme duty electrical system.
8.2 160 amp (minimum) high output alternator shall be provided.
8.3 Battery - Two (2) heavy duty 12-volt - 1150 combined CCA minimum for gas engines, combined 1400 CCA minimum for diesel engines, lead acid premium construction, maintenance free. Terminal shall be of different size to prevent incorrect cable installation. Batteries shall be mounted in slide-out tray with access door on curb-side of the vehicle for easy access and removal.
8.4 All accessories and electrical equipment, with the exception of head lights, tail lights, parking lights, emergency flashers, interior lights, and lift, shall be wired through the vehicle ignition switch so as to be operative only with switch in the ON or accessory position.
8.5 Original manufacturer's vehicle wiring shall remain unchanged to the greatest extent practicable consistent with requirements of these specifications. A separate fuse panel for all add-on components located in an accessible area inside the vehicle shall be provided.
8.6.1 Wiring and terminals shall meet or exceed current federal and state vehicle requirements and be amply sized for both mechanical strength as well as to carry required currents without significant voltage drops. Wiring must be mechanically crimped
8.7 Wiring shall be continuously enclosed in non-metallic loom meeting current SAE Standard J562a and be adequately supported and routed for protection from heat, moisture, solvents, corrosion, road debris, abrasion and tension.

Wiring shall be of sufficient length to permit positioning, as well as replacement of terminals twice without excessive tension. Protective grommets shall be provided at points where wiring penetrates metal or other material. Power wire to lift shall be securely clamped and protected. OEM wiring enclosed in Packard Conduit is acceptable. OEM and all other wiring not protected shall meet above specifications. Any wiring including OEM that is routed over exposed, jagged metal shall be enclosed in non-metallic loom as described above. All wiring including chassis manufacturer's, located in the body of the vehicle shall be enclosed in non-metallic loom as described above.

8.8 Grounding of components shall be through polarized, shielded terminals wired to main structural ground points. Grounding through hinged doors or covers of any type is not acceptable. Ground points shall be bolted to main structure free of paint, oil or rust, coated with silicone grease after fastening.

8.9 Electrical components which may require servicing or replacement shall be readily accessible through access panels or covers. Installation of aftermarket electrical components and systems in the engine compartment shall be eliminated to the greatest possible extent.

8.10 Complete wiring diagrams shall be provided with each vehicle.

8.11 All wires shall be color coded as indicated in wiring diagram for ease of service.

8.12 Maximum radio suppression available from OEM shall be provided.

8.13 An in-line circuit breaker of adequate capacity for circuit to wheelchair lift shall be provided in a readily accessible location.

8.14 Two heavy duty electrical, three speed (intermittent, low and high speeds) windshield wipers and windshield washers shall be provided.

8.15 All switches and controls necessary for the operation of the vehicle shall be conveniently located in the driver's area and shall provide for ease of operation and be appropriately marked. There shall be no switches and controls necessary for the operation of the vehicle located above the windshield or driver's door with the exception of the driver's courtesy lights.

**9 Interior Climate Control**

9.1 Deluxe heater and defroster with maximum BTU available shall be provided.

9.2 A rear auxiliary heater 65,000 BTU minimum, shall be provided. Blower switch with off/low/high positions (minimum), and thermostat control shall be provided.

9.3 All controls shall be located within easy reach of operator and shall be located on the control panel. Separate panel switches shall control heating and air-conditioning units.

9.4 **Air Conditioning:**

9.4.1 Unit shall be Carrier Model AC-713Max or approved equal.

9.4.2 System shall utilize dual engine-driven compressors, minimum ten (10) cubic inch displacement, protected by high and low pressure switches.

9.4.3 System output shall be minimum of 68,000 BTU/hr-IMACA.

9.4.4 System shall utilize Carrier Model CM-3, or approved equal skirt mounted condenser rated to 76,000 BTU/hr, located on road side, in front of rear wheels, and installed to minimize collection of road dirt and facilitate maintenance. Condenser shall be copper tube, aluminum fin coil type with high pressure switch, filter/dryer and sight glass. Condenser shall be cooled by three fans with permanent magnet motors providing at least 2,400 CFM through the condenser.

9.4.5 Evaporator shall be Carrier Model EM-1 or approved equal, mounted to roof frame structure in the top rear of the vehicle interior. Evaporator shall be copper tube, aluminum fin coil type with expansion valve, low pressure switch and concealed drain hose. It shall incorporate dual 13.5 VDC permanent magnet motors driving fans with a total minimum output through the evaporator of 1600 CFM.

9.4.6 System shall be integrated with a compatible in-dash driver's seat evaporator unit with essentially comparable standards of design and performance.

9.4.7 Driver's in-dash A/C unit shall be separately controlled from the passenger area system. It shall include off/low/medium/high fan speed control. In-dash unit shall not interfere with removal or replacement of the engine cover.

9.4.8 Passenger area air conditioning system shall be separately controlled from a control station at the driver's position with a off/low/high (minimum) blower switch. All electronic relays, fuses and circuit breakers shall be located in one location inside vehicle for reliability and ease of repair.

9.4.9 Refrigerant hoses shall be double braided polyester yarn and nylon liner.
9.4.10 Refrigerant fittings shall Quick Click, double O-Ring utilizing one-piece clamping system.
9.4.11 Auxiliary air conditioning system controls only shall activate compressor clutch.

9.5 Vehicles shall be equipped with one Transpec Model 1122, or approved equal, roof ventilation/escape hatch centered in vehicle roof over the rear axle.
9.5.1 Roof ventilation/escape hatch features shall include ventilation, rubber gasket to prevent leaks and emergency exit capability.

9.6 When the ignition system is turned off, the rear auxiliary heater and air conditioning system shall be automatically shut down.

9.7 The successful bidder shall certify that the air conditioning and heating system is adequate for the vehicle being provided.

9.8 All refrigeration and heater lines that enter the passenger compartment shall be encased in a rigid material, fiberglass, aluminum, etc., that harmonizes with interior to prevent injury to passengers in the event of line eruption.

9.9 All air conditioning and heater hoses and wires that pass within twelve (12) inches of exhaust system shall be shielded in a manner to prevent heat damage to them.

**10 Interior Trim**

10.1 Interior panels shall harmonize with exterior color accent striping.

10.2 Ceiling trim panels shall be steel, melamine, ABS plastic, vinyl clad aluminum, smooth fiberglass gel coat or approved equal, applied in one or more sections with vinyl clad steel, aluminum or stainless steel trim strips covering panel joints. Panels shall be supported to prevent buckles, vibration, drumming or flexing and particular care shall be exercised to keep body light fixtures from weaving or bouncing when the vehicle is in service.

10.3 Sidewall trim panels shall be of the same material as listed for ceiling trim panels, applied as specified above. Horizontal trim molding of stainless steel or anodized aluminum, FRP or ABS plastic shall cover top of sidewall trim at base of windows (if needed to cover seam).

10.4 All interior panels, materials and treatments shall be flame retardant in conformance with FMVSS 302 and treated to be easily cleaned. Inside panels to be vinyl faced and scuff resistant.

10.5 All protruding hazardous surfaces shall be eliminated.

**11 Seating** (Refer to diagram)

11.1 Passenger seats shall have full individual wire mesh-grid seat spring suspension for each passenger, contoured full lower back (lumbar) support, and ultra-thin backrest for optimum weight and hip-to-knee room. Frames shall be 1" tubular steel. Aisle seats will include padded grab handles at the headrest area of the seatback.

11.2 **Seat Dimensions**
11.2.1 Seat width: 17.5" minimum (per person)
11.2.2 Seat depth: 17" minimum
11.2.3 Seat back: 19" minimum, 25" maximum, as measured from top of seat bottom to the top of the seat back.

11.3 Seat upholstering color (selected by NHDOT), both back and bottom cushion, shall be vertical or combination vertical and horizontal quilting. In addition front of bottom cushion shall be rolled. Foam shall be contoured, dense, transit grade polyurethane with a minimum thickness of one and one half (1.5) inches.

11.4 Upholstery material shall be 36 oz. per sq. yd. transit vinyl. Color shall be selected from manufacturer's standard colors.

11.5 All metal surfaces shall be chemically cleaned, iron phosphated, painted and baked to provide rugged, long lasting, rust resistant surface.
11.6 Each seat position shall be equipped with retractable passenger restraint belts. Seat belts shall be bolted through the floor, independent of seat, or bolted to seat frame.
11.7 Passenger seats shall be installed on a track system to permit convenient removal and rearrangement.
11.8 A double fold-a-way flip seat shall be installed along the roadside in the wheelchair area. Locking device shall be constructed to be manually released to avoid accidental return during use. Additionally, flip seats shall be upholstered with same quality and color material as standard passenger seats. Flip seat shall include touch tape signal to request stop.
11.9 All aisle seats shall include a black molded, non-upholstered, folding arm rest.
11.10 The operator's seat shall be OEM with adjustable lumbar support, tilt back, with four-way power base and be equipped with automatic retractable lap and shoulder harness. Seat shall include retractable arm rests or approved equal. The seat shall be adjustable forward and backward.

**12 Floor and Floor Covering**

12.1 The subfloor shall be seven (7) ply ¾" thick (minimum) marine grade plywood sealed at all edges.
12.2 The subfloor shall be applied over corrosion resistant steel floor panels. Subfloor frame shall consist of 1" x 2" x 14 gauge (minimum) steel tubing welded together. Subfloor frame shall be mounted to OEM alternate frame spacers. Additionally, wheelhouse assemblies, made of corrosion resistant 12 gauge (minimum) steel, bolted, riveted or welded to floor assembly shall be included.
12.3 Subfloor assembly shall be mounted to vehicle chassis in a manner to minimize the road shock being transferred into vehicle body.
12.4 Floor is to be covered with RCA transit floor or approved equal. Flooring shall be smooth under seats and wheel wells and ribbed over aisle and step treads. The step treads shall have molded-in white step edges. Flooring color shall harmonize with vehicle interior.
12.5 RCA rubber flooring shall extend up the sides of the wall of the vehicle to the side wall seat mounting track to produce a seamless cove molding.

**13 Steps and Stepwell**

13.1 Front step height from ground (no load) shall be 12.0" maximum. Individual risers shall be 9.5" maximum in height and in case of more than one riser, all shall be the same height. Step tread depth to be 8" minimum.
13.2 The stepwell shall be modular design twelve (12) gauge galvanized or galvaneal steel and shall be smoothly and continuously welded into OEM structure. Stepwell shall be adequately reinforced to prevent noticeable deflection when either step is loaded over the center half with a 300 pound static load.
13.3 Stepwell shall be completely enclosed and weather tight when passenger door is in the closed position.

**14 Passenger Doors**

14.1 **Front Entrance Door:**
14.1.1 The vehicle shall be equipped with an electrically operated double leaf, outward opening "transit-style" door with molded, overlapping, safety seal at center, located opposite the driver. Door shall be a minimum of 30" X 80" opening.

14.1.2 The door shall have upper and lower or full vision design tinted windows that conform to all applicable Federal and State Motor Vehicle Safety Standards.

14.2 **Wheelchair Lift Door**

14.2.1 Wheelchair lift door(s) shall be located on the right (curb) side of the vehicle, behind the rear wheels.

14.2.2 Wheelchair lift door shall provide 68" (minimum) of walk-in headroom as measured when lift is in full raised usable position. The lift door shall have a clear opening width adequate for ease of operation of the wheelchair lift being supplied with this vehicle and shall be ADA compliant.

14.2.3 Lift door shall be equipped with a metal safety device or gas strut to hold door securely in full open position when lift is in operation.

14.2.4 Lift door shall have glazed windows that meet all applicable Federal and State Motor Vehicle Safety Standards.

14.3 **Doors - General**

14.3.1 Keys and locks for all doors are to be supplied except passenger entrance door.

14.3.2 All doors shall be properly sealed to prevent entry of air drafts and water into vehicle interior including spray from commercial vehicle wash equipment and driven rain.

Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash, salt and other exterior elements without cracking, leaking, loosening or deteriorating.

14.4 **Rear Door**

14.4.1 Rear door shall be located in the center of the rear body cap and aligned with the aisle. The door shall be equipped with a metal safety device to hold door securely in the open position. The door will have tinted upper and lower full vision windows that conform to Federal Motor Vehicle Safety Standards (FMVSS).

**15 Service Compartments and Access Doors**

15.1 If provided, service access opening or doors in floor or interior shall be properly secured and sealed to prevent entry of fumes and water into the vehicle interior. Method of sealing shall permit removal and replacement of access doors without damage to sealing requirement.

**16 Windshield and Windows**

16.1 Windshield and driver door shall be OEM glazed with laminated glass and uniformly tinted.

16.2 Side windows shall be a flat black aluminum and shall be a minimum of 29" x 38" framed T-sliding window to meet all applicable Federal and State Motor Vehicle Safety Standards. They shall be Lucite SAR Bronze BZ-2412 or tempered Safety Glass, 25% to 35% light transmission, bronze or gray tint. Two of these windows, one on each side, shall be top hinged emergency exit type, with decals providing instructions as to their use.

16.3 All windows shall be fitted with durable, firmly installed, weather seals to prevent the entrance of air and water, including spray from commercial vehicle wash equipment and driven rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash, salt and other exterior elements without cracking, leaking, loosening or deteriorating.

16.4 Drain holes shall be incorporated in the window sash frame to allow interior condensation to drain to the exterior. Sash construction shall be such that the sash drain shall prevent entrance or back-up of water into the vehicle.

16.5 Two windows shall be provided in the transition panel between the windshield and the ambulatory passenger door. The upper window shall be triangular and shall measure 14" wide at the bottom and 14" high minimum. The lower window shall be rectangular and the largest available from the body manufacturer. A single window design in the transition panel that essentially replaces and provides approximately the same surface area as the two -window configuration described above is acceptable. Either window design shall eliminate the blind spot created by the transition panel.

**17 Exterior Lighting**

17.1 LED roof marker lights, red or amber, one at each corner, shall be provided.
17.2 LED marker lights, three (3) lamp cluster, amber or red lens, at front and rear shall be provided.
17.3 License plate holder at rear shall be illuminated.

**18 Interior Lighting**

18.1 Interior shall be illuminated so as to provide a minimum of 12 foot candles of illumination measured at 36" above the floor.
18.2 Driver courtesy light providing at least 2 foot-candles of illumination measured at the step tread shall light when driver door is opened. All other interior lights shall operate only when ignition is in "on" position, and stepwell and interior lights shall operate when passenger door is opened and ignition on. Additionally, a driver controlled override shall be provided to allow operation of all interior passenger courtesy lights when doors are closed and ignition on.
18.3 All passenger stepwells and doorways shall have at least 2 foot-candles of illumination measured on the steptread or lift platform, when deployed at the vehicle floor level. Lighting shall be mounted so as not to create a hazard for passengers.
18.4 Passenger doorways shall have outside lights which, when the door is open, provide 1 foot-candle of illumination on the street surface for a distance of 3 feet from all points on the bottom step tread outer edge. Such lights shall be located below window level and shielded to protect the eyes of boarding and existing passengers.

**19 Finish and Color**

19.1 All exterior surfaces shall be smooth and free of visible fasteners, dents and other imperfections.
19.2 Exterior paint to be acrylic enamel or approved equal. The vehicle shall be white with a maroon accent stripe package, color to be approved by the State of New Hampshire.

**20 Stanchions and Grab Rails**

20.1 All stanchions and grab rails shall be 1 1/4" stainless steel or stainless steel clad tubing. Vertical stanchions shall be secured top and bottom with barrel bolts to prevent twisting. All stanchions shall be mounted floor to ceiling in structural member.
20.2 All modesty panels shall be padded and covered with the same brand and color that covers the seats. Grab rails in stepwell area shall be stainless steel.
20.3 There shall be a vertical stanchion and modesty panel located at the rear of entrance door. Provision shall be made for grab rails at both sides of door, within easy reach from the ground to assist passengers in both boarding and exiting. Grab rails shall be mounted to stanchions and sidewalls.

20.3 A vertical stanchion and full length plexigalss panel shall be provided between passenger seat and wheelchair positions (if seats are located rear of wheelchair positions) and between passenger seat and lift mechanism.

20.4 A vertical stanchion and modesty panel shall be provided behind driver's seat. A clear plexiglass panel shall be installed filling the area between the stanchion and wall and grab rail to ceiling.

**21 Body and Roof**

21.1 All body parts shall be treated so as to prevent corrosion. Body construction shall have sufficient rigidity to prevent vibration, drumming or flexing in service.

21.2 All exterior joints shall be protected with appropriate sealant to prevent wind and water leakage.

21.3 Body shall be made tight to prevent leakage and thoroughly water tested.

21.4 The exterior side and roof panels shall be made of gel-coated fiberglass or aluminum, reinforced and of sufficient strength to support entire weight of fully loaded vehicle on its top or side, if overturned.

21.5 All fixed exterior panels shall be closed end riveted, molded or welded to body frame. Screws may be used in conjunction with a lock or rivet system. However, no exposed metal screws shall be permitted. Rivet spacing shall be in accordance with best practice of industry standards.

21.6 All posts in body side, and roof section shall be made of durable aluminum alloy or steel, channel or box construction securely welded to the under frame structure so that the entire assembly shall act as one unit without any movement at the joints. The end post shall be designed to resist shear that would result in case of collision.

21.7 A rollover cage of same design and construction as body side and roof sections shall be welded to chassis cab to protect driver in the event the vehicle rolls over.

21.8 Minimum interior headroom in aisle area to be 74".

21.9 All exposed under framing, underside of flooring, body panels below floor level, stepwells and wheelhousing to be fully undercoated.

21.10 Roof gutters shall be installed over the windows and doors. Gutters shall be designed so as not to spill water on operator's exterior mirrors and intermediate drain holes shall not drain water on windows and doors.

21.11 The wheelhouses shall be made of corrosion resistant, 16-gauge (minimum), steel, bolted, riveted or welded to floor assembly. Ample clearance under load and under all positions of the suspension and steering geometry shall be provided between the wheelhousing and tires.

21.12 OEM rustproofing warranty shall be provided, plus five (5) year 150,000 mile (minimum) rustproofing warranty on body.

21.13 The substructure shall be bolted to the OEM chassis frame on rubber grommets.

**22 Insulation**

22.1 Inside walls and ceiling to be insulated with a minimum R-Factor of 6. Insulation package to include full-length headliners and panels on ceiling, doors and body sides. Insulation shall be flame retardant.

22.2 The engine compartment shall be insulated from the passenger compartment with a minimum of 1" thick fiberglass material or equivalent so as to minimize van interior noise level, heat and fumes.

**23 Mirrors**

23.1 Each vehicle shall be equipped with two (2) 7"x10" (minimum) exterior rear view mirrors with breakaway mounting brackets, one on each side. Right side front mirror shall be mounted so as to prevent contact with boarding passengers or pedestrians. Mirror arm shall be adequate length to provide rearward vision. Mirrors shall also include convex feature.

23.2 Standard OEM rear vision mirror with non-glare, day-night feature shall be provided.

23.3 A crossover mirror shall be installed on the front of vehicle which enables driver to see directly in front of vehicle from seated position.

23.4 One 6"x 16" minimum adjustable interior passenger viewing mirror shall be provided and mounted in such a way to allow the driver to easily view passenger activity in the vehicle from the driver's seat.

**24 Wheelchair Lift (Lift must meet requirements of 49 CFR Part 571 in effect at the time of manufacturer)**

24.1 Wheelchair lift shall be a Braun Ultra III (commercial type model L917IB Millenium), (commercial type) or approved equal.

24.2 The wheelchair lift shall be electro-hydraulically or electro-mechanically operated, mounted on the curb side of the vehicle, and accessible via access doors.

24.3 Lift shall incorporate a power fold mechanism for platform.

24.4 The lift assembly shall safely accommodate a minimum load of 700 lbs. All power units, operating joints, linkage and mounting points to the body shall be certified by the manufacturer as being adequate for the minimum load requirement.

24.5 Lift shall be power-up and power or gravity-down.

24.6 There shall be a pressure relief built into the hydraulic system to prevent "jacking" of the vehicle, if the power remains on once the lift touches the ground.

24.7 An automatic safety barrier shall be provided at front of platform. An automatic or manual release of barrier at ground level is acceptable.

24.7.1 Lift platform shall have a barrier which prevents a wheelchair from rolling off the edge closest to the vehicle until the platform is in its fully raised position. Each side of the lift platform shall have an 8" (minimum) barrier.

24.8 Lift shall be equipped with a manual override to permit lift to be raised or lowered manually in event of power failure or emergency.

24.9 Hand held lift control shall be provided with a minimum 5 ft. cord attached so lift may be operated from inside or outside of vehicle.

24.10 Lift platform shall be equipped with handrails on two sides, which move in tandem with the lift and which shall be graspable and provide support to standees throughout the entire lift operation. Handrail specifications are as follows:

24.10.1 A usable component (handle) at least 8 inches long with the lowest portion 30 inches (minimum) above the platform and the highest portion 38 inches (maximum) above the platform.

24.10.2 A grasping surface with a diameter of 1.25 to 1.5" and corner of radii of not less than 1/8 inch.

24.10.3 A minimum of 1.5" knuckle clearance from the nearest adjacent surface.

24.11 Adequate provisions for safely storing the lift controls, when not in use, shall be provided inside the vehicle.

24.12 All pulleys, chains, cables, etc., on both the lift platform shall be fully enclosed

24.13 A complete set of operating instructions, schematics and a trouble shooting guide shall be included with each lift.

24.14 Lift platform shall be minimum 33" wide and 51" long.

24.14.1 Lift platform surfaces shall be free of any protrusions over 1/4" high and shall be slip resistant.

24.15 Control box shall be lightweight and weatherproof. Additionally, controls shall have sequence interlock to prevent folding of lift platform before it is in full raised position.

24.16 A safety device shall be provided that shall render lift inoperable when lift door is closed.

24.17 Each lift-equipped vehicle shall use an interlock between the lift controls and vehicle braking system, transmission or door, or shall provide other appropriate mechanisms or systems, to ensure that the vehicle cannot be moved when the lift is not stowed.

24.18 In the event of a power or equipment failure the lift shall be designed to deploy no faster than 12 inches per second.

24.19 Lift platform shall move at a rate which does not exceed 6 inches per second during lowering and lifting and 12 inches per second during deployment and stowage.

24.20 The boarding edge of lift platform shall have a band of color(s) running the full width of the step or edge which contrasts from the lift surface.

24.21 The lift shall be warranted against defects, parts and labor, for a minimum of one year from date of acceptance of the vehicle.

**25 Wheelchair Securement System**

25.1 Securement devices and their attachments shall restrain a force in the forward longitudinal direction of up to 2,500 pounds per securement leg or clamping mechanism and a minimum of 5,000 pounds for each mobility aid.

25.2 The securement system shall be located as near to the accessible entrance as practicable and shall have a clear floor area of 30 inches by 48 inches. Flip seats may be installed in the securement area but shall not obstruct the clear floor area.

25.3 Wheelchair securement system shall be Q-Straint Q-8100-A1-SC or approved equal, to secure wheelchairs facing forward, and must comply fully with Americans with Disabilities Act requirements.

25.4 Wheelchair tie down and occupant restraint shall consist of four slide and click points for each wheelchair station and separate lap restraint for the occupant.

25.5 Floor anchorage points shall be compatible with Q-Straint Q-8100-A1-SC securement straps. Anchorage points in the passenger aisle shall be as recessed and flush with the floor as possible. Recessed area shall be sealed prior to anchorage point installation to prevent the intrusion of water. Anchorage points shall be secured in accordance with California Highway Patrol Regulation Title V - Register 77, Number 22 5-8-77.

25.6 One Q-Straint storage bag per set of securement straps shall be mounted on the rear wall of the vehicle, at floor level to accommodate the weight of the securement devices.

**26 Miscellaneous**

26.1 Maximum (heavy duty) radiator size and cooling fan available shall be provided. Radiator shall be equipped with surge tank if available from chassis manufacturer. Coolant provided per State Standard Specification (-34°F).

26.2 Vehicle shall be equipped with a 30 gallon (minimum) fuel tank(s).

26.3 Indicating devices shall be gauge type, not "tell tale" lights, and include the following:

26.3.1 Voltmeter.

26.3.2 Oil Pressure Gauge.

26.3.3 Engine Temperature Gauge.

26.3.4 Fuel Tank Level Gauge.

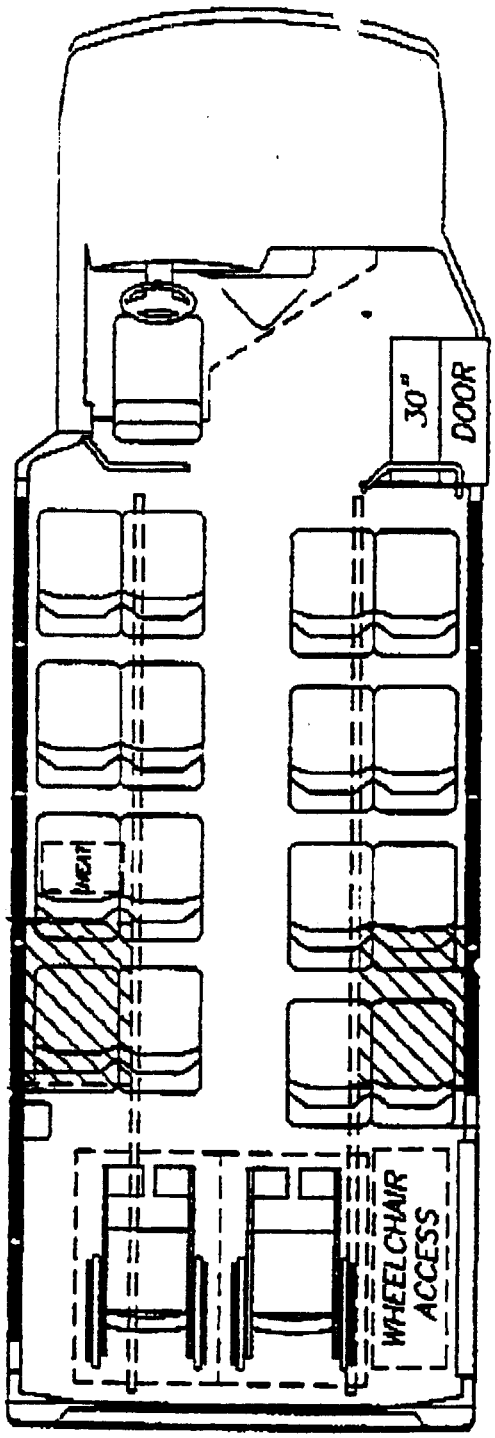
26.3.5 Speedometer with Odometer.

26.4 Audible backup alarm to be installed.

26.5 Vehicle shall be equipped with front and rear Romeo Rim energy absorbing help bumpers or approved equal.
26.6 Dual horns shall be provided.
26.7 Driver's sun visor shall be provided.
26.8 Vehicle shall be equipped with front and rear mud flaps.
26.9 A minimum five (5) pound dry powder type fire extinguisher, with gauge and hose, U.L. approved shall be provided, securely mounted vertically in an easily accessible location inside vehicle.
26.10 A three (3) triangle reflector kit shall be provided and securely mounted in an easily accessible location.
26.11 A standard 12-unit first aid kit shall be provided.
26.12 Vehicle shall be delivered with chassis manufacturer's shop manuals and an "As Built" shop manuals.
26.13 All brackets and fasteners for attaching front and rear license plates to the vehicle shall be provided by the Contractor.
26.14 Each vehicle shall contain a sign(s) printed in clear type that indicates that seats in the front of the vehicle are priority seats for persons with disabilities. Each securement location shall have a sign designating it as such.
26.15 Vehicle shall be equipped with Tie Tech, Inc. Safe-Cut webbing cutter and Evac-Aid evacuation blanket or approved equal, securely mounted in a location easily accessible to the driver.
26.16 Vehicle shall be equipped with OEM standard AM/FM stereo (front and rear, four speakers) radio-compact disc player with public address system amplifier with hand held microphone.
26.17 Latching storage compartments over the driver's door shall be provided.
26.18 Vehicle must include New Hampshire Transit logo 8" X 18" applied to left side of transit door area. Final location to be determined by NHDOT.
26.19 Vehicle will be equipped with two (2) US DOT approved rubber wheel chocks. Wooden wheel chocks will not be acceptable.

**27 Quality Assurance and Delivery**

27.1 The Contractor shall assume all responsibility for maintaining quality of all components and equipment supplied on these vehicles.
27.2 The NHDOT shall have the right to inspect the vehicles during production and final assembly, prior to delivery.
27.3 The NHDOT and/or receiving agency will carry out a thorough inspection upon delivery prior to acceptance of the vehicle, and may refuse delivery should defects be found.
27.4 The NHDOT or receiving agency will conduct a water leak test on all windows and doors, both OEM and those altered or placed on the vehicle during conversion.
27.5 Vendor shall include as part of bid a detailed description of the warranty provisions covering the proposed vehicle and necessary equipment, and full warranty detail and registration forms. **Minimum warranty coverage: Chassis 3 years/36,000 miles and Body 5 years unlimited miles.** The location of the provider of warranted repairs, within 200 miles of the receiving agency, shall be listed for each warranted item.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